

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Atlas of Pathological Histology*. By Dr. GOTTLIEB GLUGE, Professor of Physiology and Pathological Anatomy in the University of Brussels, etc.; translated from the German by JOSEPH LEIMY, M. D., Pathologist to St. Joseph's Hospital, Philadelphia; Fellow of the College of Physicians, etc. etc., with three hundred and twenty figures, plain and coloured, on twelve copperplate engravings. Philadelphia, Blanchard & Lea, 1853: folio, pp. 100.

We are glad to see this excellent work of Gluge translated into English by so competent a hand, and put within the reach of the profession in this country. The history of the development and changes of the elements of pathological tissues, has become now a necessary introduction to the study of morbid anatomy. It can no longer be looked upon as merely accessory. Bearing the same relation to it as does normal histology to normal anatomy, it appears to us to be of still higher importance, since it has a closer and more direct bearing upon practical medicine. Whatever makes our knowledge of diseased structure clearer, must throw light also upon the plan of cure, and show us too, in many instances, where a cure is impossible. The microscopic examination of morbid products has in this way rendered essential service to medicine; the conflicting opinions of microscopists, have, moreover, gradually become harmonized, and the errors of imperfect or hasty observation corrected by time, experience, and the increased number and skill of those engaged in the pursuit. Hence, greater confidence can be placed in the stability of facts now observed, than could have been accorded a few years since.

This being, as far as we know, the only work in which pathological histology is separately treated of in a comprehensive manner, it will, we think, for this reason, be of infinite service to those who desire to investigate the subject systematically, and who have felt the difficulty of arranging in their mind the unconnected observations of a great number of authors. The development of the morbid tissues, and the formation of abnormal products, may now be followed and studied with the same ease and satisfaction as the best-arranged system of physiology. We hope that the period is not remote when it may equal this branch of study, in the fulness and certainty of its facts.

In the Introduction, are given tables of the magnitude and weight of the organs of man, in the normal and abnormal conditions.

These, which are doubtless the result of a great deal of laborious industry, will be found of much utility for reference.

In the first section, the development of the elements of the tissues is considered. Here is described the latest well-ascertained mode of cell-formation in animal structures; the analogy existing between the pathological and physiological development of cells is also shown, as well as their artificial formation. The second section treats of the combination of these elements in perfect or imperfect tissues, and arranged according to the processes of disease.

The formation of the (pathological) blastema, forms the subject of the next section. Under this head, an account is given of the derivation of the plasma from which the material of new tissues is evolved. Dr. Gluge says, that it is deposited in two modes "without a previous stasis of the blood, as in normal nutrition and with stasis of the blood-corpuscles, probably through their agency, as in inflammation." The author's views of the latter process are very clearly expressed. He divides it into the stages of congestion, hyperæmia, stasis, exudation, and gangrene, at any of which it may terminate. He makes a distinction between congestion and hyperæmia, the first consisting of "an unusual flow of blood through a certain portion of the capillary system in a given time,"

the latter in "an accumulation of blood in a portion of the capillary system, in arteries or in veins produced by a retardation of the circulation." The first is not necessarily the commencement of inflammation, but the latter is invariably its forerunner. In hyperæmia of the capillaries, the blood-corpuscles are described as accumulating and coming into immediate contact with their walls, to which they adhere, thus retarding the flow of blood and giving redness to the tissue.

"If the capillary vessels are stopped up with blood-corpuscles, all movement of the sanguineous column ceases. The so-called lymph-corpuscles increase in number, and the lymph space has disappeared. The blood-corpuscles themselves undergo the following changes: They become grouped frequently in regular columns, resembling piles of coin; their colouring matter dissolves in the small quantity of remaining liquor sanguinis; and they become irregular and fuse into a firm fibrinous mass. Or, they decrease in size, give up their colouring matter, and a portion of their fibrine, and become united by means of a soft, gray, coagulated, albuminous matter, into mulberry-formed groups, the inflammation-globules. Accompanying this change, serum, stained red, exudes from the capillary walls; and these are themselves converted into pus, corresponding to the condition of the so-called inflammatory engorgement. Or, the blood-corpuscles give up their contents to the liquor sanguinis, which, effusing from the capillaries into the surrounding parenchyma, constitutes fibrinous exudation. At first, the fibrine is always dissolved in a greater or lesser quantity of serum, but rarely remains a long time in the liquid condition, as in the so-called *hydrops fibrinosa*, most usually coagulating immediately. Under the latter circumstances, the walls of the capillaries become invisible, apparently from their having been pressed together by the exudation; and an organ in this degree of stasis, as, for instance, a hepatized lung, contains a much smaller number of blood-corpuscles than in the normal condition. The extravasation of liquor sanguinis determines, in all grades of stasis, swelling of the organ; and the impediment to the capillary circulation augments contraction of the arteries, and hence the beating of the part, which is therefore a result, and not a cause of stasis. So soon as stasis has advanced to a considerable extent, the blood yet retained within the vessels presents a decided increase in the quantity of fibrine, which is also a result and not a cause of the condition. The exudation may now be either absorbed, organized, converted into pus, or become entirely decomposed."

In this description of the microscopical characters of the pus-corpuscles, the author calls them *nuclei*. He believes them to be the nuclei of future cells, principally from "the fact that, in granulations and the formation of cicatrices, it is readily and directly conclusive that cells form upon pus-corpuscles, for the nuclei of young cicatrix cells, in appearance and chemical relation, are perfectly identical with the latter." The author says that lymph-corpuscles are undistinguishable from pus-corpuscles without nuclei; and, that "the nucleus of perfectly formed epithelial cells exhibit the strongest resemblance to pus-corpuscles." Hence, he says, that he believes no longer "in the possibility of distinguishing pus-corpuscles by means of the microscope, from physiological and other pathological structures which resemble them." His views of the structure and office of these bodies are quite new, and worth the attention of the cultivators of microscopic anatomy. The chemical relations, and the varieties of pus are next described, followed by an account of the process of granulation and cicatrization. The succeeding sections upon the histological metamorphosis of the blood, on purulent infection and gangrene are of equal interest. After these, we find a series of observations on histology, which are illustrated by the plates. These latter being the same as accompany the original work, the learner is spared the inconvenience arising from the frequent inaccuracy of the copies of microscopic drawings.

The few additions which have been made by Dr. Leidy are both judicious and important, and the translation is executed in a correct and faithful manner.

M. S.

ART. XV.—*What to Observe at the Bedside and after Death in Medical Cases.*
Published under the authority of the London Medical Society of Observation. Philadelphia, Blanchard & Lea, 1853: 8vo. pp. 206.

THE Society under whose auspices this useful little volume is published, was founded about two years ago by Drs. Walshe, Jenner, and several other gentlemen, in imitation of the Parisian Society of the same name, and of which Dr. Walshe was an early and active member. The circumstances of its publication may best be understood by an extract from the preface: "Soon after the Medical Society of Observation had been formed, it was felt by the members that the labour of analyzing and comparing clinical observations would be greatly lightened, and the precision of the observations themselves increased, if the records of these were in every instance arranged on an uniform plan. The Society in consequence adopted, with some modifications, a form of arrangement of symptoms and after-death appearances, which had been framed by Dr. Walshe. The publication of this form seeming desirable, it was referred to a committee, who expanded and altered various parts of it, and finally threw it into its present shape."

The general arrangement, and to some extent the details of the plan are identical with those which originated in the Parisian Society, and which have been published in various manuals, but especially in that of Raciiborski (*Precis du Diagnostique*), but there is far greater minuteness and more attention to systematic arrangement of the points of inquiry in the present than in any previous work. This, which might by some be looked upon as likely to discourage novices in the art of observation, and as therefore a fault, does not really merit blame. For the observer is not compelled to note in each patient the whole of the phenomena and conditions here enumerated. Only a part of them indeed is applicable to any particular case, and some of them are much more important than others. Hence, although working according to a uniform plan, every one is at liberty to adopt just so much of it as his convenience or opportunities enable him to do. His results, however, will acquire a greater value in proportion to the completeness of the elements from which they are derived.

The general divisions of the work are these: Part I. *The Clinical Examination of a Patient.* 1. The Personal Description and Peculiarities of the Patient in Health. Under this head, his physical and psychical peculiarities are noted. 2. Previous History, including the hygienic influences operating upon him; the General Health, Sexual Condition, and Family History. 3. History of the Attack, its Prodromata, Invasion, and Progress. 4. Actual Condition of the Patient, including Generalities; Condition of the Integuments; Organs of Locomotion, of Digestion, of Respiration, and Circulation; the Lymphatic System, Urinary Organs and Urine, Organs of Generation; the Head, and the functions of the brain; the Spinal Cord and its functions; the Organs of Sense; the Nerves; the Vascular Glands. Finally, the Progress of the Case—diet, regimen, external and internal treatment—phenomena of death. Part II. contains in minute and systematic detail the points to be noted prior to commencing a *Post-mortem* Examination, and during its progress, and of course repeats the physical inquiries noted among the symptoms besides all the other analogous ones relating to the interior of the body. An Appendix gives more in detail than had previously been done the inquiries proper to be made relative to the condition of the membranes, fluids, and certain pathological results. The following extract is subjoined for the purpose of illustrating the manner in which the study of disease is prescribed to those who would understand it thoroughly:—

"*Throat, etc. Uvula*:—length; form; thickness; direction of its axis;—surface, smooth, glazed; color—œdematous; flaccid; abscess sloughing; ulcers; vesicles; exudation, etc.

"*Soft palate*:—(particulars as *Uvula*.)

"*Fauces*:—size of opening; state of pillars (particulars as *Uvula*).—*Pain*; its direction;—other sensations, constriction, dryness, etc.;—tactile sensibility, increased, diminished.—Noisy respiration: snoring.

"*Tonsils*:—swelling and tenderness externally.—Position of tonsils; distance between them;—size; form; consistence; fluctuating;—tender to touch;—color;—surface; dry, moist, smooth, glazed, uneven; openings on surface;—œdemâ; abscess; sloughing; ulcers; secretions and exudations on surface.

"*Pharynx*:—size of cavity;—apparent thickness of membrane.—Surface of mucous membrane; smooth, glazed, granulated; dry, moist;—vessels apparently full;—its colour;—stains.—Secretions; exudations; blood on surface.—œdema; boggy; fluctuation; abscesses; tumours; sloughing; ulcers, and other destructions of substance; cicatrices.—Condition of follicles.—Projections from posterior nares into cavity.—*Abnormal sensations* in pharynx; burning, dryness, constriction, etc.—Tenderness.

"*Œsophagus*:—swelling in neck externally.—Examination with bougie; obstruction to passage, its seat; can it be overcome by moderate pressure?—Signs of dilatation and sacculation?—Is anything visible during retching?—*Pain* in course of gullet, during swallowing or at other times;—sense of constriction, burning, globus, etc.

"*Deglutition*:—pain during the act: its seat, extent, duration, character.—Deglutition difficult; period of act at which difficulty is perceived;—attempt to swallow productive of sense of suffocation, of spasm of muscles of throat or pharynx;—is difficulty greatest with solids or liquids?—what matters are swallowed most easily?—is a large gulp of liquid swallowed more easily than a small one?—has the patient any contrivance for rendering the act easier?—does the act produce cough?—do swallowed matters return by nostrils?—is the act affected by temperature of matters?—is the site of obstruction distinct to patient, and how?—is deglutition favoured by a recumbent posture? Frequently or constantly repeated efforts at deglutition.

"*Regurgitation*:—period after swallowing at which it occurs; attended with effort, anxiety, or nausea? accompanied by any stethoscopic sound?—Physical characters of regurgitated matters; their reaction."

To all who are convinced that knowledge is to be got by labour only; who believe that in medicine the only genius that does not lead astray is the genius of interpreting nature by reading, or even by spelling out, the phenomena through which alone she speaks to the understanding; to all who recognize the fact that the only progress ever made in medicine was the result of a close, steady, docile, and persevering study of these phenomena; and to all who are ambitious of adding somewhat to the mass of medical knowledge that shall outlive doctrines and sects—we heartily commend this little book as a timely and efficient helper, and a guide which, if patiently followed, will lead them to knowledge, and fit them to use whatever skill nature may have granted them.

A. S.

ART. XVI.—*Principles of Human Physiology, with their chief applications to Psychology, Pathology, Therapeutics, Hygiene, and Forensic Medicine.* By WILLIAM B. CARPENTER, M. D., F. R. S., F. G. S., Examiner in Physiology and Comparative Anatomy in the University of London, Professor of Medical Jurisprudence in University College, etc. Fifth American from the fourth and enlarged London edition, with three hundred and fourteen illustrations. Edited, with additions, by FRANCIS GURNEY SMITH, M. D., Professor of the Institutes of Medicine in the Medical Department of Pennsylvania College, Lecturer on Physiology in the Philadelphia Association for Medical Instruction, etc. Philadelphia, Blanchard & Lea, 1853: 8vo. pp. 1091.

THE treatise of Dr. Carpenter on the Principles of Human Physiology has been with us always a favourite work. We know of none, indeed, following it up through its successive editions, which is better calculated, on the whole, to exhibit a faithful reflection of the present aspect of physiology in its philo-

sophical and practical bearings. A sound discretion has been exercised by Dr. Carpenter, in making his selection from the vast mass of results which have been accumulated by the labours of the more recent physiologists, in admitting those only which bear the marks of correct deductions from a sufficient series of careful experiments and patient and cautious observations, or, when contradictory or inconsistent results are presented by investigators of equal authority, in adopting those most consonant with usually received views. Although in weaving his materials into a systematic form, so as to present a correct history of the phenomena which normally occur during the existence of living beings, with those general laws or principles which express the conditions of their occurrence, and the causes to which they are attributable, he may not succeed in convincing every reader of the correctness of his teachings, still, for fulness and accuracy, the account he has furnished of the facts and doctrines which constitute the principles of human physiology as now generally received, it must be conceded, has not been excelled by that of any other writer; while as a systematic treatise, the work of Dr. Carpenter recommends itself by its clearness and precision.

The foregoing remarks are especially applicable to the edition now before us, which may, in fact, be considered in the light of an entirely new work, in which the present convictions and opinions of the author are as completely expressed, as if the treatise had now been for the first time put forth, "the old materials having been incorporated with the new, rather than the new with the old, and having only been employed where they could be readily made subservient to this purpose."

The following outline of the important changes which have been made in the character and arrangement of the present edition, as given by the author in his preface, will show the extent to which the reconstruction of the work has been accomplished.

"Considering it extremely important that his readers should have a clear idea of the sense in which the terms *law* and *cause* are subsequently employed, he has devoted a few pages of the *Introduction* to an explanation of his views upon these points, and he hopes that he may be there found to have thrown some light upon the philosophy of causation, which may be of assistance to other scientific inquirers.

"In order to make room for a portion of the new matter which he desired to introduce into the treatise, he has felt it necessary to omit all those references to the structure and vital actions of the lower animals which had not an immediate and direct bearing upon human physiology; and consequently, of the first chapter of the previous editions—'On the Place of Man in the Scale of Being'—he has only retained so much as related to the characteristics that distinguish Man from the mammalia which most nearly approach him. The succeeding chapter, which treated 'Of the Different Branches of the Human Family, and their Mutual Relations,' has been extended in all that relates to man, and curtailed in that which rather belongs to Comparative Physiology, and has been transferred to nearly the end of the volume, which the author considers to be now the more appropriate place for it.

"The second chapter of the present edition, comprising a general view 'Of the Chemical Components of the Human Body, and the changes which they undergo within it,' is now for the first time introduced. Several new views will be found in this chapter, which have occurred to the author during its preparation; he would especially point to that of the respective relations of fibrine and albumen to the nutritive processes, and of the former to the gelatinous tissues; and to the general summary which forms the last section, in which the discoveries of M. Cl. Bernard, in regard to the elaboration of sugar and fat in the liver, are placed, he believes, in a somewhat novel aspect.

"From the consideration of the chemical components of the organism, and of the participation of chemical forces in its operations, it seemed natural to pass on to that of 'The Structural Elements of the Human Body, and the Vital Actions which they exhibit,' which forms the subject of the third chapter. Nearly the whole of this chapter, which includes the general doctrines of cell-formation and of vital force, in their application to human physiology, appears for the first time, in this edition.

"Passing on to the more detailed survey of the constituent parts of the human body, the first place seemed to be claimed by the blood, the 'physical characters, chemical composition, and vital properties' of which are treated of at some length in Chapter IV. This portion has been greatly extended, and almost entirely rewritten; the great importance of the subject, in its bearings on Pathology as on Physiology, having been constantly kept in view.

"The fifth chapter, 'On the Primary Tissues of the Living Body, their Structure, Composition, and Action,' is essentially the same with the third chapter of the previous edition; but a large amount of new matter, in great part supplied by the elaborate 'Mikroskopische Anatomie' of Prof. Kölliker, has been incorporated in it; and many new illustrations, chiefly derived from the same source, have been introduced. The account of the vital endowments of the muscular and nervous tissues, previously contained in other chapters, has been transferred to this, so as to make it embody a complete sketch of those physiological actions of these separate parts of the organism, which are afterwards to be considered in their relations to each other.

"In conformity with the opinion expressed by some of his friendly critics, and by many teachers of Physiology, the author has reversed the previous arrangement of the chapters which treat of the functions in detail: those relating to the organic functions being now placed *before* those in which the animal functions are described, instead of *after*. This has involved a new distribution of much of the matter which was previously treated in a connected form in the chapter on the 'Functions of the Nervous System,' since it has appeared to the author very desirable that the whole group of actions whose aggregate makes up each function, should now be considered in its connection, and thus the movements of deglutition, respiration, &c., not having been explained, as was formerly the case, in the earlier part of the volume, are described, and their connection with the nervous system examined under each separate head. As their general relations to the nervous system are previously explained, however, in the sixth chapter, the author does not apprehend that any inconvenience will be experienced from this alteration.

"The series of chapters on the several organic functions remain essentially the same as in the previous edition; but important additions and corrections have been made in every one. Thus, in Chapter VII., 'On Food and the Digestive Process,' the whole subject of Food is much more fully discussed than heretofore; and the most important of the results obtained from the study of the digestive process by Frerichs, Bernard, and other experimenters, have been embodied in the account of it. In Chapter VIII., 'On Absorption and Sanguification,' the structure and development of the Ductless Glands have been more fully described, in accordance with the researches of Kölliker, Sanders, Ecker, Gray, and others, and their relation to the process of sanguification more clearly elucidated. In Chapter IX., 'On the Circulation of the Blood,' the causes of the heart's sounds have been more fully considered; a view of the nature of its rhythmical contractions has been suggested, which the author believes to be original; and the most important among the results of Prof. Volkmann's elaborate researches on the dynamics of the movement of the blood have been introduced. In Chapter X., 'On Respiration,' the most important additions to the first section are those which embody the results of Dr. Hutchison's inquiries on the movements of respiration; to the second, the data furnished by the researches of MM. Regnault and Reiset, Prof. Scharling, M. Barral, and others, upon the amount of oxygen absorbed, and of carbonic acid exhaled; whilst the third, in which the 'Effects of Suspension or Deficiency of Respiration' are discussed, has been largely augmented by a summary of the evidence afforded by our recent experience, of the marked tendency of an habitually imperfect respiration to produce a liability to zymotic disease. Nearly the whole of Chapter XI., 'On Nutrition,' has been newly written for this edition. In Chapter XII., 'On Secretion and Excretion,' important additions have been made under almost every head; and those parts, especially, which relate to the agency of the excretory apparatus in maintaining the purity of the blood, have been extended. This chapter, however, is less comprehensive than formerly; several of the subjects which it previously included, having been transferred to portions

of the work in which they seemed to find more appropriate places; the salivary and pancreatic secretions being now treated of in the chapter on Digestion, and those of the testes and mammae in that on Generation. Of the three subjects included in Chapter XIII., 'On the Evolution of Heat, Light, and Electricity,' the first alone had been systematically considered in the previous editions, and this has been considerably extended in the present. Under the second head, will be found some very curious observations on the evolution of light in the living human subject; and under the third is given a summary of the admirable researches of M. Du Bois-Raymond, which have been recently brought before the scientific public in this country by Dr. Bence Jones.

"It is in the Chapter (XIV.) devoted to the Functions of the Nervous System, which constitutes one-fifth of the entire volume, that the greatest additions and alterations will be found. This subject, in its Psychological as well as in its Physiological relations, has occupied more of the author's attention than any other department of Physiology; and he now offers the more matured fruits of his inquiries and reflections, with some confidence that, even if his views should hereafter require modification as to details, they will be found to be fundamentally correct, and to furnish materials of some value in Psychological inquiry, as well as in the study of Mental Pathology." "The peculiar states which are known under the designations of somnambulism, hypnotism, mesmerism, electro-biology, &c., are all considered in their relations to sleep on the one hand, and to the ordinary condition of mental activity on the other; and the author ventures to believe that he has not only succeeded in throwing considerable light upon the nature of these aberrant forms of psychical action, but that he has been enabled to deduce from their phenomena some inferences of great importance in Psychological science.

"In Chapter XV., 'On Sensation, and the Organs of the Senses,' comparatively little change has been made; several additions have been introduced, however, and some corrections made. The next Chapter (XVI.), 'On Muscular Movements,' has been entirely remodelled; the portion which relates to the vital endowments of muscular fibre having been removed to Chapter V., Section 6, and its place supplied by new matter which contains many original views, especially under Section 4, which treats of the 'Influence of Expectant Attention on Muscular Movements.' Comparatively little alteration has been found necessary in Chapter XVII., 'On the Voice and Speech,' or in Chapter XVIII., 'On the Influence of the Nervous System on the Organic Functions;' an important addition has been made to the latter, however, with reference to the influence of the state of 'expectant attention' on the operations of nutrition, secretion, &c.

"The additions and alterations which have been made in Chapter XIX., 'On Generation,' will be found to be both numerous and important, especially under the section on the 'Development of the Embryo,' which has been almost entirely rewritten, so as to bring the view of this process more into accordance with the existing state of our knowledge of it. The author has not felt it expedient, however, to enter into minute details upon this subject.

"In Chapter XX., 'On the Different Branches of the Human Family, and their Mutual Relations,' all that directly relates to this subject has been considerably extended, and many novelties have been introduced; whilst those arguments for the specific unity of the human races, which are derived from the analogy of the lower animals, have been simply referred to, having been fully dwelt on by the author elsewhere.

"The closing Chapter, 'On Death,' has been almost entirely written for this edition; the subject having been only touched on incidentally in the preceding."

The additions by the American Editor are few, but appropriate—as he remarks: "Dr. Carpenter's untiring industry left him little to add beyond an occasional illustration of the text, or notice of more recent discoveries."

We fully concur with Dr. Smith, in the confident belief "that the present will more than sustain the enviable reputation already attained by former editions, of being one of the fullest and most complete treatises on the subject in the English language."

D. F. C.

ART. XVII.—*An Introduction to Clinical Medicine. Six Lectures on the Method of Examining Patients, Percussion, Auscultation, the use of the Microscope, and the Diagnosis of Skin Diseases.* By JONAS HENRIS BENNETT, M.D., F.R.S.E., &c., 2d ed., with wood-cuts. Edinburgh and London, 1853: 12mo. pp. 134.

THIS little book may be commended to the attention, not only of the student but of the practitioner of medicine. No one can profitably study disease who does not observe with method, who is not familiar with physical diagnosis, and (we may venture to add, with Dr. Bennett) with the use of the microscope. The first lecture contains instructions upon the proper method of examining patients. He recommends the plan taught by Professor Rostan, of Paris. "Its object is to arrive, as quickly as possible, at a knowledge of the existing condition of the patient, in a way that will insure the examiner that no important organ has been overlooked. For this purpose, we ascertain, in the first instance, the organ principally affected and the duration of the disease, by asking two questions: "Where do you feel pain?" and "How long have you been ill?" Let us suppose that the patient feels pain in the cardiac region, we immediately proceed to examine the heart functionally and physically, and then the circulatory system generally. We next proceed to those organs which usually bear the nearest relation to the one principally affected, say the respiratory system; and we then examine the lungs functionally and physically. We subsequently interrogate the nervous, digestive, genito-urinary, and integumentary systems. * * * * Lastly, we inquire into the past history of the case, when we shall have arrived at all the information necessary for the formation of a diagnosis." After mentioning the points for inquiry under these heads, and giving some useful hints upon the manner in which it should be conducted, he continues, "When the patient dies the examination is not completed." Insisting strongly upon the necessity of method and thoroughness in *post-mortem* researches, he says, "the object of an autopsy is threefold: 1st, the cause of death; 2d, an appreciation of the signs and symptoms; 3d, the nature of the disease." A brief summary follows of the facts which it is important to observe, together with general directions for conducting these examinations with propriety and cleanliness. In the two lectures upon percussion and auscultation, the account of these methods of exploration is ample and practical, and may be studied with advantage even by those who are no longer on the threshold of their professional career. Dr. Bennett's arrangement is very good, and his language being perfectly plain and intelligible, there is no difficulty for the learner in understanding the author's meaning.

The directness and perspicuity of the author's style is especially remarkable in his lectures on the use of the microscope. His directions for its employment are so clear, his illustrations of its advantages so apt, and the results obtained by it apparently so certain, and so easy of attainment, that one is somewhat at a loss to understand how, as a clinical adjuvant, it should have been so much neglected. Dr. B.'s familiar explanation of its mechanical construction, of the way to observe with it, and his account of its principal applications to diagnosis in the examination of healthy or diseased structure or secretions, will go far, we think, in inducing many to make a trial of its powers, who before may have been timid or skeptical. Dr. B. makes use of and recommends an Oberhauser microscope (made for the use of physicians at his suggestion) as the most useful on account of its steadiness, power of easy adjustment, facility for observation and demonstration, and portability.

He objects to the bulk and complication of the London instruments, as also to the fact that, with lenses of a medium power, the amount of light is so great as to be detrimental to the eyes. He says: "I cannot employ Ross's fourth of an inch for fifteen minutes without feeling intense headache; and I know of more than one excellent observer, in whom the sight has so much suffered from this cause as to incapacitate them from continuing their researches. In the same manner the lenses of Brunner and Nachet give rise to a yellow light highly disagreeable;

while those of Oberhæuser, Shiek and Pistor, and Frauenhofer (with Arnici's and Ploss's, I am not familiar), present a pale blue light most pleasant to work with, and which may be gazed at for hours without fatiguing the eye." We must refer our readers for further details, and for information which it is difficult to find elsewhere, to Dr. Bennett's book.

The sixth and last lecture is upon the "Classification and Diagnosis of Cutaneous Diseases." Dr. B. adopts the classification of Willan, as modified by Bielt. With the view, however, of making it more simple and practical, he excludes from the order *exanthemata* and *pustulæ* the eruptive fevers—rubeola, scarlatina, erysipelas, variola, and vaccinia. His pustular class contains only impetigo, ecthyma, acne, and rupia. Those singular cutaneous affections which are not known in the English climate, he does not classify at all. As an introduction to the study of skin diseases, this lecture will answer a very good purpose, being concise, accurate, and practical. In fine, we cannot do otherwise than heartily commend this book for what it strictly is, an *introduction* to clinical medicine. Books of this kind are very much wanted, and, when confined to their legitimate province of opening the way to fuller research, they do not give that discouragement to superficiality and idleness which is often the unfortunate result of the popular manuals and compendiums.

M. S.

ART. XVIII.—*On the Transmission, from Parent to Offspring, of some Forms of Disease, and of Morbid Taints and Tendencies.* By JAMES WHITEHEAD, M.D., F.R.C.S., on the Medical Staff of the Lying-in Hospital, and Lecturer on Obstetric Medicine, at Manchester, etc. etc. etc. London, 1851: 8vo. pp. 351.

THE study of what have been termed hereditary diseases is a most interesting one. It is one, however, that has been much neglected; instead of being based upon a cautious analysis and comparison of accurately observed facts, our present knowledge, in relation to it, is in the highest degree vague and conjectural. A female, labouring under certain forms of disease, may unquestionably give birth to a child affected congenitally with the same malady of which she is herself the subject. This, however, is comparatively a rare occurrence, and is not what is generally understood by the hereditary transmission of disease. Those maladies most liable to be transmitted from parent to child, seldom if ever present any indications of their presence at birth, most commonly not for many years subsequently; often, not until after puberty, and occasionally not until after the meridian of life has been attained or even passed. They are hereditary in predisposition only. When they do occur, they are produced by the same class of exciting causes as induce them in those who inherit no particular predisposition. The predisposed simply exhibiting a much greater susceptibility to the influence of these exciting causes than the latter, and, hence, becoming liable to the occurrence of certain maladies under a much slighter degree of exposure to their causes.

The diseases to which a predisposition is inherited may be warded off, or even the predisposition itself abated, if not entirely eradicated, by a correct hygienic course of life. Many well-authenticated instances could be adduced in which, in this manner, a manifestly inherited tendency to gout, tubercular phthisis, epilepsy, and insanity has been counteracted. This we believe will account very satisfactorily for the immediate offspring of parents labouring under one or other of those diseases most liable, according to general observation, to be transmitted from parent to child, having lived to an advanced age without its occurrence; while, in their offspring, the disease has early presented itself. The course of life of the first, adopted either upon hygienic principles or from necessity, removing them from the influence of morbid causes, they in consequence escape disease, notwithstanding their inherited predisposition; but transmitting this predisposition to their children, in these latter disease becomes developed

whenever their occupation and modes of living bring them under the action of its exciting causes.

In order to transmit a predisposition to certain forms of disease to their offspring, it is not necessary that the parents should actually labour under these themselves. Various causes, as impure air, bad or deficient nutriment, neglect of cleanliness, improper clothing, indoor confinement, dissipated or licentious living, ill-assorted marriages, trouble, grief, and the depressing passions, generally, by which the regular performance of the several organic functions in the parents are disturbed or impaired, will very generally, even when insufficient to produce actual disease in them, impart to their offspring a more or less decided predisposition to disease, which, unless counteracted by proper hygienic measures, may be transmitted through many generations.

Hence, we find that among certain classes of society in Europe, exposed to physical privation and moral suffering, who live together in the same unwholesome localities, intermarry within their own circle, and pursue alike the same vicious course of life, a predisposition to disease is the inheritance entailed upon the children, even to the third and fourth generation.

In the work before us, the subject of inherited predisposition to disease is very ably investigated; and the subject, in one of its most important bearings, illustrated by a consideration of transmitted syphilis.

Though we cannot agree with Dr. Whitehead in all his conclusions, we return him our thanks for having directed especial attention to the subject. We do not believe that an accidental defect in either parent, as, for instance, the loss of a limb, the distortion of a joint, or the cicatrix produced by a burn or wound can be transmitted to the child. We have no reason for believing that, under any circumstances, a defect of parts artificially produced can be entailed by the parent upon the child. Congenite deficiency or redundancy of parts are thus transmitted, occasionally, we admit, though very rarely. But the two cases are by no means parallel: the latter cannot, with any propriety, be adduced in proof of the possibility of the first. If, in any instance, we should expect to find a deficiency of parts, artificially produced, to be transmitted from parent to child, it would be in the case of those in whom, for so many generations back, the prepuce has been removed in the rite of circumcision. I have conversed with some of the oldest and most intelligent operators in this country, who assure me that they have not observed any remarkable difference between the prepuce of a Jewish child before circumcision, and that of other children.

Dr. Whitehead is a believer in the power of the imagination of the mother over the fœtus in utero. He supposes that peculiarities of structure and function, whether morbid or normal, in the fœtus during the term of its intra-uterine life, may be induced by external impressions which operate on the system of the new creature through the imagination of its mother, or even where the impress is limited in its effects to merely physical inconvenience. He adduces two or three cases in support of this opinion; two of them very curious, apparently very apposite and conclusive; we must confess, however, after an attentive perusal of them, they have not convinced us of the correctness of the opinion they are adduced to support: the remaining cases have little or no bearing upon the position assumed by Dr. Whitehead.

Much the larger portion of the treatise is devoted to the subject of transmitted syphilis. The author's descriptions and therapeutical directions being founded on extensive personal observations, have great value in a practical point of view. The following extract from the preface will give to our readers a general idea of the conclusions of Dr. Whitehead.

"Besides confirming the statements relative to the transmission of the syphilitic taint from parents to their children, even from parents in whom all external evidence of the disease had ceased to exist; the inquiry," Dr. W. remarks, "may also contribute towards the further elucidation of another fact of equal importance; that, namely, of the derivation of certain forms of disease, commonly considered as of a simple nature, from imperfectly cured syphilis; a doctrine much more generally believed in by physicians of past ages than by those of the present day. Children who had exhibited evidences of constitutional syphilis of

a genuineness which could not be doubted, both on account of its form and of the antecedent circumstances, were seen, some time after the first accession of symptoms had been subdued, to have relapses, at intervals varying from one to several years; the character of the disease undergoing certain changes in some of its phases, at each recurrence, but still retaining one or more of its essential attributes. In course of time, however, it gradually altered, assuming, at a later date, more the type of disease not commonly deemed to be of specific nature. For example, an infant of syphilitic parents has an attack of syphilitic erythematous disease in the second week after birth; this is speedily subdued by treatment, and the child thrives for a time. During the period of teething, or after that of weaning, an eruption of vesicular or squamous character breaks out, attributed usually to error in diet or to atmospheric influences. This also may be modified, or even made to disappear by remedies in common use. At the second teething period, often much earlier, impetiginous eruptions come out on the scalp and elsewhere, with enlarged lymphatic glands about the neck, these symptoms partaking less of the venereal character than those of earlier date. At a still later epoch, the hypertrophied glands become more prominent, some undergoing the process of suppurative inflammation, and the patient is considered to be decidedly scrofulous, the secreted matter possessing the sanio-floeculent character of scrofulous suppuration. In this way the purulent, the scrofulous, or other morbid habit of body is developed; liable to manifest itself each in its particular way, at certain critical periods of life, especially at puberty; or it may be brought into active existence by external agencies at any period, in form of chronic abscesses, arthritic affections, or white swellings, or laryngitis terminating in fatal diseases of the lungs; or the latter malady may be produced more directly by tuberculous deposit, or abscess of these organs, having in like manner a disastrous result.

"In other instances disease of the mucous tissues develops itself, the direct effect of perverted nutrition, with impairment of the assimilative function of the solid fabric. Thus the rachitic diathesis is determined. These and other immediate sequelæ of syphilis may be modified to a certain extent by treatment, but, should the cause be not fairly understood, the proper remedies are not applied, and the taint remains, to a certain extent, as a constitutional evil destined to stamp its character upon generations to come.

"On comparing the morbid phenomena thus brought about, the history of which has been carefully traced from the beginning, with others of similar aspect whose history is not known, one is led to inquire more minutely into the etiology of those affections usually regarded as of simple or rather unknown origin. In several instances of this kind, submitted to rigid investigation, it has appeared highly probable that such agencies were in operation immediately previous to the first appearance of such symptoms.

"I do not by any means attribute the origin of all cases bearing but a remote resemblance to those directly resulting from syphilis to causes of a specific nature. My wish is, having satisfied myself respecting the specific sources of some, to direct more particular attention to the subject. I have known a family of children, whose father suffered from both acute and secondary syphilis in early life, of which he was considered perfectly cured before marriage, but who had, notwithstanding, a most violent attack of secondary disease of long duration, in form of cutaneous eruptions and burrowing inguinal abscesses, commencing twelve months after marriage, and without any additional infection; his wife suffering at the same time under a train of symptoms of like nature. Two of the daughters died, before the age of twenty years, of phthisis, complicated with white swelling of the knee, in both cases diseases which had previously been unknown in the family of either parent. The two sons suffered from syphilis in the usual form during infancy and childhood, the traces of which existed in adult life. The offspring of one of these bear evidence of the same taint in characteristic form. I was personally acquainted with these individuals, and had the early history from the father himself, a man of education and probity.

"The perpetuation of syphilis is a fact sufficiently known. A case will be found in the following pages of its continuance to the fourth generation, on what I deem satisfactory evidence. In another instance, where this form of

disease existed with great severity in the second remove, in the person of a husband, the wife and offspring suffered from syphilitic symptoms of an unmistakable character, of which the latter perished. I have no means of determining the mode of origin of this malady in the first-named example; and the evidence in the second was, unfortunately, of a hearsay kind only, but it was strongly in favour of its specific nature. In a third instance, however, in which the disease was well marked in a husband, and proved fatal to both his wife and a numerous offspring, the evidence of its syphilitic origin was conclusive, or at least as convincing as such kind of evidence commonly can be. This case, should its historical validity be admitted, leads to the inference that the disease in the two preceding instances may have had a similar commencement.

"With reference to the treatment of the class of diseases under consideration, my opinion, after a varied practice in this department, remains very nearly the same as it was four years since. Whether the taint be of recent or of ancient date, I have invariably found it necessary to pursue a mild but prolonged course of treatment by means of the class of remedies denominated alteratives, aided, at the proper stages, by sea water and mineral baths, change of climate if practicable, and a rigid system of hygiene practised through a long period."

Dr. Whitehead considers that the transmission of a predisposition to disease is through some morbid condition of the blood existing in the parent, and by him communicated to the child. It would, perhaps, be more correct to say that a tendency to derangement in the organs concerned in the production and elaboration of the blood was transmitted by diseased parents to their children, as the mode in which a predisposition to disease is entailed upon the latter. The opinion of Dr. W. is thus expressed:—

"There can be little doubt that in all diseases to which a predisposition is inherited, the blood is the part of the system where the germ of the hidden evil is to be found, the pabulum which fosters its existence and growth, the agent by which its presence at length becomes more palpably manifest, and the medium through which alone we can remedially or curatively operate.

"It is highly probable that the blood, if carefully analyzed soon after birth in an individual so circumstanced, would be found to possess some characteristic peculiarity in the arrangement of its elemental constituents; that this peculiarity in most instances, if further examined, would be seen to increase progressively with the growth of the body, without interfering, for a time, with the healthful discharge of its functions. But it is only to a certain extent that the changes here implied are compatible with a state of health; a degree of disproportion is sooner or later arrived at, under which the blood becomes unfitted for the various organic requirements, and the subsequent changes, if uninterfered with by treatment, are rapid and destructive. It is unknown to what extent the blood elements may deviate in their relative proportions from what is considered the healthy standard, without visibly prejudicing the integrity of the system. In spontaneous anemia, a disease whose proximate condition consists in deficiency of the globuline, Andral found that when the cachectic changes first presented themselves, this element of the blood had already become considerably reduced in quantity. In sixteen patients whose blood he analyzed while the disorder was yet in the incipient stage, the average amount of the globuline had fallen from 130, its healthy standard proportion, to 109 per 1000; and, in twenty-four cases in which the analysis was practised at a more advanced stage, the average was only 65 per 1000." D. F. C.

ART. XIX.—*The Nature, Symptoms, and Treatment of Consumption.* Being the Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London. By RICHARD PAYNE COTTON, M.D., &c. &c. London: Svo. pp. 286.

DR. COTTON'S position, as assistant physician to the "Hospital for Consumption and Diseases of the Chest," gives value to his opinions upon the treatment

of phthisis. We propose to notice this portion only of his work, since his remarks upon the nature and symptoms of the disease do not call for any comment. In treating of the prevention of this disease, the author very justly condemns the too common practice of "physicking" children for every trifling ailment; he thinks that it may entail upon them a feebleness of constitution, by which they may become more apt to acquire diseases of a tuberculous or scrofulous nature. While, also, he advocates the employment of proper precautionary measures, and gives rules for the observance of a proper diet and medication, he disapproves of that excess of carefulness by which often the body becomes so enervated as to unfit it for bearing the slightest exposure. It is in the early stage of phthisis, before the deposit of tubercle can be ascertained, that the success of treatment is the most frequent and conspicuous. Dr. C. inculcates the great necessity of attention to the diet of children; he recommends animal food as "almost indispensable," change of air and outdoor exercise. Iron and cod-liver oil, together or alternately, are particularly useful at this age. "The glandular enlargements, more particularly about the neck, which often complicate these cases," he says, "should be but little interfered with, especially when there are threatenings of tuberculous deposit elsewhere. I have seen the healing of strumous cervical glands rapidly followed by scrofulous disease in more important organs; and, on the other hand, I have known the supervision of some glandular affection at once check the progress of tubercular degeneration in other parts."

We cannot find anything particularly new in Dr. C.'s treatment of the disease when fully established; he meets its symptoms and complications with the latest and best remedies. He confirms the statements of Dr. T. Thomson, with regard to the usefulness of the trisnitrate of bismuth in the diarrhoea of phthisis; he gives it in doses of five grains every four or five hours. In the laryngeal complications of pulmonary phthisis, the author has used, with great advantage, Dr. Horace Green's instrument for the introduction of a strong solution of nitrate of silver into the opening of the larynx. He says: "I have known the voice regained, the irritable cough removed, and the tenderness and difficulty of swallowing dissipated entirely by it; indeed, I think we might almost speak of its curative effects (so far at least as the larynx is concerned) in some very early cases." "I would not advise it to be practised, however, when there is reason to believe that the mucous membrane is *extensively* ulcerated, nor when the pulmonary disease is in a very advanced stage, and the strength of the patient much exhausted." He states that he has known the practice to be prejudicial under these circumstances, increasing the cough and weakening the strength of the patient. Dr. C. considers inhalations to be of very trifling use in this complication.

The author has had a large experience with the cod-liver oil. We subjoin the results taken from a table of one hundred cases in which he employed this remedy, *these* being "selected from many others upon no other grounds than the completeness of their history."

"Thirty-one patients were *greatly improved*; twenty-one of these were in the first stage; six in the second stage; and four in the third stage. Of those in the first stage, five entirely regained their health, and, were it not for the chance of a relapse, might be fairly said to have been cured; nine resumed work, enjoying a complete arrest of their disease; and seven failed to report themselves finally at the hospital." * * *

"Twenty-six patients were *moderately improved*. Of these, eighteen were in the first stage; four in the second stage; and four in the third stage." * * *

"In forty-three cases, however, no improvement was observed." * * * These were also in various stages of the disease. Eleven were known to have died, many were obviously becoming worse when last observed, and several ceased attending at the hospital."

It may be seen that Dr. C. claims no case of cure after the first stage of the disease, and even speaks with some reserve of the ultimate chances of those five whose health to all outward appearance was perfectly restored. Dr. C. did not observe that the degree of improvement was in proportion to the increase of weight, several who had gained the most, not being the most im-

proved. "Two remarkable cases will be seen, in which the weight was augmented, one to the extent of three ounces, and the other to that of twelve ounces weekly, although at the same time the tubercular disease was advancing; in one of these death took place suddenly; the other was lost sight of, but was supposed to have ended fatally." Dr. C. uses the pale oil. He says: "None should be employed which is not clear, pale, and as nearly as possible tasteless; the dark coloured and impure oils, which were at first thought superior to the others, are unfit for use," on account of the disgust and nausea they produce. It should be taken midway between meals, and in some agreeable vehicle; the author recommends new milk or some light wine. He thinks the emulsions given to disguise the odour and taste, are far less beneficial than the pure oil. The addition of hydrocyanic acid or of creosote he has often found effective in making the oil agree with the stomach; in other cases a light bitter answers the same purpose. Dr. C. states that he has made repeated trials of the train oil, spermaceti oil, and neat's-foot oil; as well as of linseed, almond, and olive oils. The animal oils were productive of a marked improvement in the patient's condition, but still inferior to the cod-liver oil. The above-named vegetable oils were given in thirty cases, in all of which the improvement, if any, was very trifling. "It was singular, indeed, to observe the rapid improvement which often followed their exchange for the *oleum aselli*." Upon one occasion, after the linseed oil had been taken for nearly a month with no success, the cod-liver oil completely restored the patient's strength, and added to his weight one stone and one pound within six weeks; and, in another example, after having prescribed the linseed oil apparently with signal success, the health being improved, and the weight greatly increased, he discovered that the hospital supply having become exhausted, the patient, dissatisfied with his improvement, had been taking, of his own accord, the *oleum aselli*.

Dr. Cotton's book is a good, clearly written, and practical treatise, with no pretensions to novelty, but accurate and thorough, although sufficiently concise. We think the author has found the golden medium between brevity and proximity. The award of a gold medal to this essay, by the Medical Society of London, proves how highly it was thought of by the profession in that city.

M. S.

ART. XX.—*A Discourse on the Times, Character, and Writings of Hippocrates; read before the Trustees, Faculty, and Medical Class of the College of Physicians and Surgeons at the opening of the Term of 1852-3.* By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence. New York, 1852. Published by the Class. 8vo. pp. 72.

FROM the exordium of this discourse, it appears that Dr. Bartlett selected his subject in despair of being able to say anything new upon the customary topics of introductory lectures. In former addresses, he had already run the round of those exciting themes which he now somewhat disdainfully recalls, as one might allude to juvenile follies that deserve less blame than pity. In his weary search after a topic that he may handle with less repugnance, he is content with no resting-place until he finds himself hard by the shrine of the Coan Esculapius. Here, indeed, was a natural termination to his journey; and it is no wonder that he paused before the temple to admire "its Ionic columns, and its ornamented friezes of Pentelican marble, glittering and flashing in the sunlight, as he watched them through the swaying branches of the ancient oaks, chestnuts, and elms, that make the sacred grove of the temple." No wonder that he is unable to depart; for "near a column of the temple, and holding a roll of papyrus in his left hand, stands Hippocrates," surrounded by a crowd of youths, whose earnest and intelligent faces, whose dress, air, and bearing, "show plainly enough the superior refinement and culture of the class to which they belong." In such company, he might well

be contented to remain, and it is natural that he should take pleasure in bringing his hearers into the same august presence.

Dr. Bartlett evidently is not of their way of thinking who fancy that the sun of science rose when their own particular star glimmered above the horizon, and must reach the zenith when it shall culminate; but rather that the luminaries of science, like the hosts of heaven, are forever sweeping onward, and diffusing a not unequal light upon the successive portions of time and space. He feels sure that his auditors will not neglect the present; they are governed by human motives, and interest will not permit them to be negligent of what will palpably serve their ends. But he is not quite persuaded that they are out of danger of, if not already converts to, the heresy which denies the unity of science, and makes its sectaries blind to the ties which link the present to the past. He therefore thinks it well to remind this stripling time that it had no such miraculous origin as Minerva, but is the product by ordinary generation of many centuries, and bears in its form and features the proofs of its long and honourable descent.

It is a pity that the student had not more leisure for obtaining such a knowledge at least of medical history as might allure him to a personal investigation of the sources of the science and art he professes to cultivate. There is no room for it as an adjunct to any one of the courses of instruction he now follows, crowded as each already is with its own proper subjects, and no time for it in the brief five months which in the leading schools are devoted, during the first year, to making the student feel bewildered by the multiplicity of new ideas presented to him, and, during the second, to leading him the same paths over again with a somewhat less faltering step. But there might be found in some of our more eminent colleges a certain number of third-course students, who, with the more cultivated of the resident graduates, would gladly form a class for a lecturer capable of treating the History of Medicine in a proper spirit. Such a spirit we conceive to be different from that which has inspired nearly everything that has been written upon this subject. Histories of Medicine have, for the most part, been chronicles of contending sects, analyses and comparisons of hostile doctrines; doctrines which, whether victor or vanquished, have been buried under the waves of time. To the young, especially, the narrative of such contests is fastidious in the extreme; they exclaim of the lecturer, as Hamlet of the player, "What's Hecuba to him, or he to Hecuba?" they can feel no interest in the quarrel for a prize which long ago became worthless. But were the discourse of what was actually known to the ancients; did it estimate and measure the gradually rising heap of positive knowledge; did it trace the stream which now supplies us to its fountain, and describe the tributaries which from time to time swelled its flood, rather than picture the gayly decorated barks which float, and ever and anon fight, upon its surface, it would then inspire more respect for the past, more zeal for the present, and more hope for the future. We throw out this hint merely; the occasion will not permit us to develop it. An expression of the thought was prompted by the estimate which Dr. Bartlett, in common with many others, sets upon the method of medical observation which Hippocrates inculcated, and which for the last half century has been growing to be more and more dominant in the schools which have most illustrated our profession.

Dr. Bartlett finds in the *oral* teaching of Hippocrates one of the main elements of its success. The following passage may be commended to those eminent gentlemen who do not fear to assign a secondary place to this method of instruction:—

"One of the most potent agencies in the development of Greek intellect, and the advancement of Greek civilization, consisted in the general prevalence of public teaching and recitation. For many successive centuries, it was from the living lips of bards and rhapsodists, kindled with coals from the glowing altars of patriotism and religion, and not through the medium of any cold and silent written records, that the immortal strains of the Iliad and the Odyssey rang through the land, and were made literally familiar as household words."

The author, then, quaintly enough says we may imagine what would constitute the theme on "the opening or closing of one of his courses of instruction—

the Introductory Lecture, or the Valedictory Address to the graduating class of the school of Cos, at the term of the first year of the 95th Olympiad. . . .

"He would have warned his hearers against the seductive but dangerous influences of the philosophers. These men, he would have said, are, for the most part, idle dreamers, and they are nothing else. I know them well. They affect superior wisdom, and they look down disdainfully upon the physician, and the patient observer of nature. They seem to think that the economy of the universe, including the human system in health and disease, can be ascertained and understood by a sort of intellectual divination, which they call wisdom and philosophy, but which is in reality only empty hypothesis and idle speculation. He would then have entered into an examination of these systems; he would have exhibited their radical errors and defects—he would have compared them with the humbler philosophy of observation and experience, and he would have shown that they had accomplished nothing, and that in the very nature of things they could accomplish nothing, for the advancement of real knowledge."

By way of helping to explain the wonderful acquirements, and the still more wonderful wisdom of Hippocrates, the author reminds us of the fact that he lived in perhaps the most intellectual age since the birth of civilization—the age of Pericles—when Phidias, and Æschylus, Sophocles, Euripides, Anaxagoras, Socrates, Democritus, Herodotus, Thucydides, Xenophon, and Aristophanes, were building up a fame which is still undiminished, and must flourish while the world endures. The glory of the first great physician is, and can be, no less than theirs. We cannot follow the author in his sketch of the state of Grecian civilization when these heroic figures appeared upon the stage, nor in his enumeration of the sources of knowledge whence his subject drew his stores of wisdom; but we must join with him in regretting that the athletic exercises by which the grace and vigour both of body and soul were developed in the Grecian youth, should be so generally neglected in our own time. How much freer scope would the spirit have, and to what loftier heights would it not soar, but for the poison, born of stagnation, which infects the blood of modern generations. Mental and moral health are most apt to be united with masculine vigour and activity.

It is unnecessary to accompany the author either in his analysis of the works of Hippocrates, or his inquiry into the origin of Greek Medicine. To sketch them would be merely to hold up the shadow of a shade, to embody the essence of an abstract. There is in connection with the last-named subject an idea which is equally striking and just. Dr. Bartlett, in opposition to those who trace the medical knowledge of Greece to Egyptian sources, is disposed, we think, to undervalue these latter. However this may be, his illustration is still elegant and apposite. "If," he remarks, "Greece received anything from Egypt, it was like the wheat taken from her dark old sepulchres, where it had lain dormant for ages, and which germinated, and brought forth its full-headed and golden sheaves, only when planted in her own pregnant and prolific soil."

In the latter part of his discourse, Dr. B. rehearses the famous oath which is called after the name of Hippocrates, and which, it may be hoped, is familiar to most of our readers. Most heartily do we concur in the wish of the lecturer, that the use of this, or some equally solemn adjuration, might be revived on the commencement days of our medical colleges. It would be a noble spectacle to see a band of young men arise, and with outstretched hands pledge their honour to observe the moral and professional laws of the brotherhood into which they are entering. It would add one more to the many restraints which daily examples of misconduct and disgrace show to be more necessary now than ever—

"It has often seemed to me a matter of regret, that this old usage should not have been continued. There is danger, I think, in this intensely practical and utilitarian age, that we may undervalue the influence and importance of these moral sanctions—of these appeals to our higher nature. The study and the practice of our art stand in need, both of them, of all the elevating and ennobling influences that can be brought to act upon them. And this formal and religious recognition of his duties, by the young physician, would be as

appropriate and becoming, as it would be salutary and preservative in its influences. If our art is not strictly divine, it has duties and relations that are sacred—there is something sacerdotal in its offices and character, and it would be well for the young physician that his assumption of its responsibilities and obligations should be attended, like the consecration of the ancient priesthood, with the pomp of solemn and significant ceremonial.”

With this quotation we close our notice of a Lecture, which, in style of expression, range of thought, and quality of sentiment, is much above the ordinary standard of occasional discourses.

A. S.

ART. XXI.—*An Inquiry how far Consumption is curable: with Observations on the Treatment, and on the Use of Cod-liver Oil and other Remedies; with Cases.* By JAMES TURNBULL, M. D., Physician to the Liverpool Infirmary, &c. &c. Second ed., enlarged. London: Churchill, 1850: 8vo. pp. 106.

Dr. TURNBULL arranges his evidence in favour of the curability of consumption under the following heads: 1st. *Evidence from pathological facts.* The absorption of tubercle, which Dr. T. considers to be no longer of doubtful occurrence; its obsolescence, as described by Rokitsansky; the calcareous concretions so often found in the lungs in the midst of tubercles, or contained in an old tubercular cavity; the cicatrices which are found, indicating the healing of vomica, are all referred to by the author as affording valuable proof of the curability of the disease. The two last pathological facts enumerated, he says, “are not by any means rare, indeed they are very common.” In support of this assertion, the statements of Rogée, Boudet, and Dr. Hughes Bennett, of the frequency with which they met them in their examinations, are quoted by the author. These reports are probably familiar to most of our readers. After showing what evidence of the curability of consumption may be gathered from “the change produced in the symptoms,” and still more clearly from the amelioration revealed by the physical signs, the author comes to the *statistical proofs of its curability.* Reference, however, is only made to the Report of the Hospital for Consumption, from which it appears that complete restoration to health was effected in 4.25 per cent. of the cases. The most favourable results were obtained in the first stage; “nearly one-half were much relieved.” The author, in the next chapter, speaks of the influence of emphysema of the lungs in retarding the progress of tubercular disease, and expresses the opinion that pregnancy has a marked influence of the same character.

Dr. Turnbull’s management of the disease presents no peculiarity. He thinks highly of the cod-liver oil, and perseveres with it when it does not disagree with the stomach, increasing its efficacy by creosote, or by the iodide of iron. He uses counter-irritation, local inunction of the iodide of lead, and the usual palliative treatment for cough, diarrhoea, and other complications. Finally, the author reports thirteen cases of his own, gathered from hospital and private practice, to show the curability of consumption. We accept them as affording gratifying evidence of the happy effect of judicious treatment; if we must be reserved in expressing belief in the full recovery of these cases, or venture to doubt the accuracy of diagnosis, in view of the very rapid manner in which health was regained, it is not by any means from want of belief in the possibility of the disease being arrested occasionally at any stage, but from the absence of sufficient evidence in these cases reported by the author. The hopeful view his experience has enabled him to take of the curability of phthisis, is encouraging and worthy of imitation, if only it might induce some to abandon the common palliative routine practice, who follow it from an apathetic view of the value of medical resources.

M. S.

ART. XXII.—*Recherches sur les Calculs de la Vessie, et sur leur Analyse Micro-Chimique. Thèse pour le Doctorat en Médecine. Présentée et Soutenue par SAMUEL LEE BIGELOW, M. D., etc.*
The Micro-chemical Examination of Vesical Calculi. By SAMUEL LEE BIGELOW, M. D.

THE essay, whose title we have thus briefly translated, is a thesis, presented to the Faculty of Paris, by a candidate for the honours of its degree. The author, Dr. S. L. Bigelow, an American, has been successful, and we understand that his thesis has attracted considerable attention among those whose studies have taken a similar direction. With the thesis is an atlas of plates, admirably accurate, and drawn by the author himself with great artistic skill.

During his investigations, Dr. Bigelow analyzed about four hundred calculi, comprising the whole collection in the Dupuytren Museum at Paris.

The first chapter contains an elaborate review of the ultimate elements of calculi, and a comparison of the results of other observers, both French and English. Since these analyses gather part of their interest from having been made upon the calculi of different races and in different countries, we regret that Dr. Bigelow has not added the results of Dr. Peters's analyses of calculi in the museum of Transylvania University.

After a classification of vesical calculi, founded upon their organic, inorganic, or mixed nature, each element is reviewed in turn with a view to its chemical and physical characters.

Before noticing the distinctive and most original part of this essay, we must point out one or two errors into which Dr. Bigelow has been led. Thus, in speaking of that rare calculus, uric oxide, he states that it has been only once observed and analyzed (Marcet). There are, however, a number of such calculi on record; and, after the elaborate examination and analysis of a large uric oxide calculus by Liebig and Wohler, we can no longer regard its existence as doubtful.

Although Dr. Bigelow's analyses were carried even to the detection of those elements which, like iron, exist in but small amount, he does not seem to have met with sulphur in any calculi save those of cystine. We have found it almost always in vesical calculi. Iron is found in vesical calculi as frequently as copper may be detected in biliary concretions.

Chapter fourth contains a very admirable description of the mode of analyzing calculi, and of the application of the microscope to chemical uses.

Since our appreciation of chemical tests depends upon the appearances which reactions and precipitates offer to our eyes, there may be differences so minute as to force us to resort in turn to other and secondary tests. In place of this, Dr. Bigelow carries on almost all his processes upon the field of one of Næchet's new chemical microscopes, invented, we believe, by Professor Lawrence Smith.

We will not attempt to trace Dr. Bigelow through his processes. It is enough to say that the crystalline or amorphous forms of precipitates become plain upon the field of our glass. Evaporations take place, crystals form and are redissolved, and the action of reagents is viewed all within the compass of a drop of fluid. This Lilliputian chemistry becomes very convenient when we work, as we often must, with very small amounts.

When once micro-chemistry has become, as it promises to become, a science, we shall place our precipitates under our lenses, and there ascertain their nature from our knowledge of the proper forms of their crystals, or from their amorphous nature. Already we note the approach to this in the care with which Lehmann has indicated the minute crystalline form of the substances which are treated of in the first volume of his Chemistry.

The observer who shall do for chemistry generally that which Dr. Bigelow has here done for the chemistry of vesical calculi, will greatly lessen the labours of those engaged upon qualitative analysis. At the close of his essay, the author gives us a very good drawing of the microscope with which his researches were conducted. It is so arranged that the optical portion of the instrument lies below

the platform, and consequently out of reach of the fumes of chemical reagents, which may therefore be employed with the utmost freedom.

Dr. Bigelow, in his beautiful plates, has given us the forms of almost all the precipitates met with during his analyses. Some of these forms are new to us; others we recognize from personal experience as perfectly accurate representations of their several classes.

We are glad to learn that Dr. Bigelow is already engaged upon a more extensive work on the Urine of Health and of Disease, and we hope to have the pleasure of laying his results before our readers at a future period.

The essay which we have thus glanced over is the first definite advance towards the development of micro-chemistry as a practical everyday resource of the analytical laboratory. With this feeling, we congratulate Dr. Bigelow upon the contributions thus made to the science of analysis. S. W. M.

ART. XXIII.—*Records of Maculated Typhus or Ship Fever, with Suggestions of Treatment. Being the Result of a Series of Observations made during the prevalence of this Disease at South Boston and Deer Island Hospitals, in 1847-48. With Plates.* By J. B. UPHAM, M. D. New York, 1852: 8vo. pp. 60.

THESE records, published originally in the *New York Journal of Medicine*, present a very excellent delineation of the character, course, and ordinary *post-mortem* appearances peculiar to the typhus fever usually met with among the immigrants from on board of the crowded and often badly provided passenger ships, which of late years have arrived in such rapid succession in most of the Atlantic ports of the United States, with judicious suggestions in reference to the treatment of the disease.

To the correctness of Dr. Upham's delineation of ship fever, we can bear testimony, having had an opportunity of seeing much of it at the Lazaretto Hospital of this Port, during our service as a member of the Board of Health. But the most interesting part of the present records is, that in which the morbid anatomy of a most grave and frequent sequel of the disease is pointed out. This is a diarrhoea, attended with frequent exhausting discharges from the bowels, always thin in consistence, and, though at first of a light colour, becoming, if the patient does not speedily sink, dark and extremely offensive.

"It commonly made its appearance," remarks Dr. Upham, "during the latter stages of convalescence, and was brought on by imprudence in diet, especially if accompanied by premature exposure to cold and wet. But, sometimes it could be traced to no satisfactory cause. Its importance in a therapeutical point of view will be recognized, when we state that, at both the hospitals named, it was the cause of the majority of the deaths that occurred from typhus, up to the time the autopsies detailed in the following cases were made."

The frequency of the occurrence of the sequel to typhus fever here alluded to, and its uncontrollable and destructive character, were noticed in the cases which fell under our notice at the Lazaretto Hospital of the Port of Philadelphia. To the consideration of its pathological causes, the attention of Dr. Upham was early directed at the House of Industry, at South Boston, in the spring of 1847.

"Its intractability to the ordinary remedial measures, and its almost invariably fatal termination, were well calculated to rouse inquiry and investigation. We had been able to find no account of its morbid anatomy among the British writers, and had, up to this time, made no *post-mortem* examination of such cases, with a view to ascertain, if possible, the pathology of this sequel to the fever, on which might be based a rational plan of treatment: a series of clinical and autopsical investigations were instituted, the results of which are given in the pages which follow. These results, so far as we can learn, had previously been unknown, or wholly overlooked. To our view, they have an important bearing on the therapeutical management of the fever, in both its primary and secondary forms, and will tend to throw light upon the mooted points in its pathology."

Five cases are detailed in which the secondary lesion presented itself. The average duration of the fever in these cases was sixteen days; that of the secondary affection, thirteen days. The period in the convalescence, in which the diarrhoea first manifested itself, was the nineteenth day; and from the first accession of fever, the forty-seventh; which last two conditions, Dr. Upham remarks, would fall short, were a larger number of cases given.

We present the pathological appearances discovered after death, in one of the cases given by Dr. U.; it will convey to the reader a correct idea of their character.

"Externally, there appears some discoloration of duodenum, and upper part of jejunum, more at lower half of ileum, descending colon, and rectum. Both small and large intestines contain in every part a grayish, pulsatous fluid, in considerable quantity. A few small collections of fecal matter, in colour and consistence like chocolate, found in lower portion of ileum. Veins of submucous cellular tissue a little engorged in duodenum and upper part of jejunum; mucous membrane in these portions natural, as also throughout remainder of jejunum and upper half of ileum, from which point injection begins to be marked, accompanied by thickening. This condition of the membrane increases till within about two and a half feet from ileo-cæcal valve, when both the congestion and thickening become strongly marked, appearing here and there, for the space of a few inches in extent, in the form of transverse lines raised from the general surface. Near the ileo-cæcal valve, to the extent of four inches, this ridged appearance is remarkable—the elevations being from a line to a line and a half in height, and one or two lines in breadth. Within a couple of inches of the cæcum, are observed a few points of ulceration, of the size of a pin's head, extending partly through the mucous coat. In but one instance are Peyer's patches visible, it here presenting in a slight degree the shaven-beard appearance, the thickening elsewhere noticed ceasing at the border of the patch, giving it a depressed appearance. The cæcal extremity of colon shows considerable congestion and thickening, with commencing points of ulceration; these appearances increase along the ascending and transverse portions, and are still more marked in descending portion and upper part of rectum. None of the ulcerations in this case exceeded in size a split pea; they are confined to the mucous coat."

In reference to the peculiar lesions just detailed, Dr. Upham remarks that, in all the subjects examined, they were more or less developed. In three of the five cases detailed they were very prominent, but less marked in the other two. It is worthy of notice, he adds, that, in the latter, the preceding fever was milder and of shorter duration.

"It would seem that there exists an intimate connection between the conditions of the intestinal tract in primary typhus, and the changes which occur in the small intestines in the secondary disease—the latter correspond in situation with the uniform congestion and discoloration pointed out in the preceding autopsies of subjects that died in the acute stage of the fever. From these analogies, we are led to reflect upon the probability of a particular direction to these parts of the morbid influence from the first, and thereby induced to modify our treatment in the acute stage, so far as to avoid, from the commencement, all that could irritate these sensitive portions of the digestive tube, whether as food, drink, or medicines; believing that these specific morbid effects could better thus be avoided, than remedied when once induced." D. F. C.

ART. XXIV.—*A Treatise on the Causes, Constitutional Effects, and Treatment of Uterine Displacements.* By WILLIAM EDWARD COALE, M. D., Member of the Boston Society for Medical Improvement, etc., etc., etc. Boston, 1852: 8vo. pp. 52.

This short treatise on uterine displacements, which appeared originally in the *Boston Medical and Surgical Journal*, is well deserving of an attentive perusal on the part of every practitioner—especially of such as are liable to be

frequently consulted in cases of females labouring under ailments in which the uterus is supposed to be either directly or indirectly implicated.

The pamphlet before us is not offered as a comprehensive treatise on the displacements to which the womb is subject. The main object of Dr. Coale in its publication, is to direct attention to some practical views with regard to the causes of these affections, and to the means of treating them that experience has taught him to be most efficacious. To neither, however, does he claim the merit of originality—but, he thinks that “where certain of the causes which he lays down as important have been ascertained by others, they have not been properly appreciated; and, consequently, methods of treatment based upon them have been too much slighted, if not entirely overlooked.”

The opinions advanced by Dr. Coale, in respect to the causes of uterine displacements are, we believe, in their general outlines, perfectly correct. We had many years ago deduced from our own observations views similar to his. An attentive study of cases that have fallen under our care, in which the womb in young unmarried females had become more or less dislodged from its normal position, has convinced us that not only this dislodgment, but also nearly all the leading symptoms by which it is usually accompanied are dependent upon weak, relaxed, and excitable condition of the body, generally resulting from defective nutrition, a sluggishness in the performance of many of the more important of the functions of life, and a morbid susceptibility of the nervous system, caused by radical errors in the mode of living pursued by females generally, and too often by a violation of every precept of a sound hygiene in their physical training from infancy to womanhood. The success we have met with in the removal of uterine displacements and their attendant evils, by pursuing a course of treatment based upon the views referred to, has confirmed in our own mind their correctness.

The attention of physicians has been too exclusively directed to the abnormal positions of the uterus—and to these have been too generally referred all the suffering and ill-health under which the patients in whom they occur are found to labour. As a necessary consequence, the main object in the management of these cases has been to restore the uterus to its proper position, and to retain it there by a variety of mechanical means—useless, if not positively injurious, in many cases, and in none absolutely necessary, excepting “as an assistant during the first periods of the treatment to relieve speedily an urgent and embarrassing difficulty—the disposition of the uterus to descend.”

We fully concur in the remark of Dr. Coale, that many practitioners have been induced to look upon uterine displacements too much in a simply mechanical point of view, and to shape their remedies accordingly.

“The consequence has been, that local causes have been too much insisted upon as accounting for the origin of these affections, and pessaries and abdominal supporters have been too much relied upon in the treatment of them, to the disregard of remedies intended to restore the health generally, and to give tone to the system at large.”

D. F. C.

ART. XXV.—*Manual of Physiology*. By WILLIAM SENHOUSE KIRKES, M.D., Licentiate of the Royal College of Physicians, Registrar and Demonstrator of Morbid Anatomy, at St. Bartholomew's Hospital. Assisted by JAMES PAGET, F.R.S., Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital. Second American from the second London edition, with one hundred and sixty-five illustrations. Philadelphia, Blanchard & Lea, 1853: 12mo. pp. 568.

In the present edition, the *Manual of Physiology* has been brought up to the actual condition of the science, and fully sustains the reputation which it has already so deservedly attained. We consider the work of MM. Kirkes and Paget to constitute one of the very best handbooks of Physiology we possess—presenting just such an outline of the science, comprising an account of its leading facts and generally admitted principles, as the student requires during his attendance upon a course of lectures, or for reference whilst preparing for examination. To those in whose professional education physiology does not

constitute, as in that of the physician, an essential item, but who feel desirous to acquire a general knowledge of the vital conditions, phenomena, and laws of the human body in a state of health, the present manual, also, recommends itself by its faithfulness, clearness, and precision.

The text is fully and ably illustrated by a series of very superior wood engravings, by which a comprehension of some of the more intricate of the subjects treated of is greatly facilitated.

D. F. C.

ART. XXVI.—*Biographical Sketch of J. Kearny Rodgers, M. D.*, Fellow of the College of Physicians and Surgeons of the University of the State of New York, and one of its Trustees; Surgeon to the New York Hospital, and New York Eye Infirmary; Consulting Surgeon to the New York Lying-In Asylum, of the Institution for the Blind, and of the Emigrants' Hospital; formerly President of the New York County Medical Society, and Vice-President of the Academy of Medicine; and Honorary Member of the New York Pathological Society. By EDWARD DELAFIELD, M. D. Read before the New York Academy of Medicine, and published under its auspices. New York: 1882.

THIS is an exceedingly well-written and faithful memoir of one of the most distinguished surgeons of our country, contributed by one who was a fellow-pupil, and through life a steadfast friend, and who has himself reached to the highest distinction in another branch of our profession.

We regret that we cannot insert some extracts which we had marked for the purpose, but we have only space for the following, which we select not only as in the highest degree honourable to Dr. Rodgers, but as an example to be held up for all to follow:—

"A striking feature in the professional character of Dr. Rodgers was strict integrity, in the fullest meaning of the word. His patients were always sure of obtaining his opinion of their cases with perfect frankness. He made no flattering promises in doubtful cases, and especially avoided surgical operations whose necessity and advantage were not fully apparent. He adopted literally and faithfully the maxim of his great master in surgery, Sir Astley Cooper—'Never to perform an operation upon another, which, under like circumstances, he would not have had performed upon himself.' Nor did he, like too many others who rank high as surgical operators, ever operate upon a case which he considered not a proper subject for the knife, merely because the patient wished it. If there be a reprehensible practice among us: is this; and sad it is to hear men of undoubted skill and general fair fame justifying themselves, when detailing operations in cases where no probability of success existed, by this very plea. It certainly should be the surgeon's own judgment which should decide such a case, not the patient's wishes, for, much as a person may desire an operation, he trusts at last that the surgeon will not perform it if he do not have good hope thereby to save his patient's health or life. Dr. Rodgers was decided in his opinions and practice in this matter, and never yielded to the temptation his great operative skill put in his way, of operating for his own sake, not his patient's. He thought, with Hunter, that 'when the surgeon takes up his knife he lays down his science,' and left no appropriate surgical means untried before he resorted to operation.

"There was one disease, especially, in which he took strong ground in opposition to the every-day practice of surgeons:—cancer of the female breast. We all know how rarely operation is successful in this disease. He early doubted of its propriety in any case, and one of the first subjects which deeply engaged his attention was the propriety of the operation in any case of this disease. He lost no opportunity of conversing with every surgeon he met with, on his experience in such cases, and corresponded with many of the first operators in Europe and our own country on the same subject. He very soon adopted the opinion firmly, that the operation, if performed at all, should be the exception, not the rule; and almost reached the result at last, that it was never justifiable in true Scirrhus."

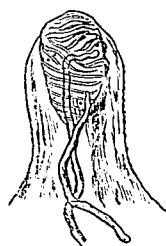
QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES
IN THE
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Structure of the Sensitive Papillæ of the Skin.*—Our knowledge of the way in which the nerves of sensation terminate in their respective organs is as yet very inexact, and the structure of these organs themselves has been in many respects but imperfectly made out. All acknowledge in the ear, and in the eye, a curious and complicated apparatus suited to receive the impressions of the special object of each of these senses; but in respect of the other three senses, such a relation is less perfectly understood. The researches of Todd and Bowman on the tongue have, however, done much to advance our knowledge of the organ of taste; and RUDOLPH WAGNER (in *Müller's Archives*, 1852, p. 493) has given interesting drawings and descriptions of certain peculiar bodies, called by him *corpuscula tactilis*, in the tactile papillæ of the skin.

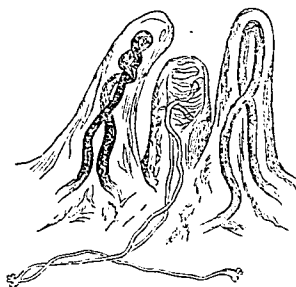
Fig. 4 represents one of these papillæ of the usual well-known form, from the anterior surface of the end of the little finger. It is represented as denuded of its epidermis, the surface of the papilla presenting slight inequalities where the lower layer of epidermic cells had rested, and its substance containing some nucleated fibres. Two nervous tubules are seen rising into it, and terminating in the oval "*Tacthürperchen*," which forms the apex of the papilla, and is imbedded in its substance.

Fig. 4.



Papilla and Corpusculum Tactilis.—After
Wagner. 400 diameters.

Fig. 5.



Papilla and Corpuscula Tactilis.—After Wagner.
400 diameters.

This body has not been isolated, and having been studied only in sections such as those we have copied from Wagner's plate, its intimate structure is not exactly known. Kölliker maintains that it is composed of a central axis, wrapped round with elastic fibres, and distinct dark striæ are certainly observed to cross it in various directions, while small corpuscles are not unfrequently among them. Wagner is quite satisfied that the nervous tubules actually enter this *corpusculum tactûs*, though the exact mode in which they terminate is undiscovered; he has not been able to find any looping of the nerves, though there are other papillæ in which looping vessels are easily seen (Fig. 5). It is very remarkable that capillaries and nerves do not appear to coexist in the same papilla, so that those which contain a looping vessel are destitute of a *corpusculum tactûs*, and vice versa. This appears to us so extraordinary as to require confirmation; but, if Wagner's account of the structure of the organ of touch prove to be accurate, an interesting addition will have been made to the physiology of the senses, even although the mode in which these rounded bodies subserve the transmission of accurate tactile impressions to the nerves may not be better understood than the precise function of the cochlear or vestibular nervous apparatus in the ear. Wagner supposes that his *corpuscula tactûs* on the surface, and the Pacinian bodies more deeply seated, absorb all the terminal filaments of the sensitive nerves, and thinks it possible that they may be connected severally with different modes of sensation; one with the appreciation of heat, for instance, and the other with touch, properly so called. At all events, that the peripheral extremities of the sensitive nerves should terminate in distinct organs, and not be merely lost in tissue, is a result which ought not to prove surprising.—*Association Journal*, Jan. 1853.

2. *On the Glands of the Mucous Membrane of the Human Stomach.*—From the careful examination of the stomach of several suicides, Dr. A. ECKER gives the following statement concerning the gastric glands: In almost the whole of the stomach are merely simple cylindrical glands $\frac{1}{2}$ to $\frac{3}{4}$ ''' long and $\frac{1}{8}$ ''' thick, going in a straight line through the mucous membrane, ending in a club-like swelling, very rarely exhibiting a division of the blind end. They contain round and angular cells, of a diameter of 0.017 to 0.020^m with a nucleus composed of larger granules; towards the open end are seen more developed cells, towards the blind one, more nuclei and granular matter. At the cardiac end, besides these simple glands, other glandular follicles are situated, the blind end of which is divided and pouched; their contents are the same as just described, except that more fat-granules are seen towards the blind end. Near the pyloric orifice he constantly found, besides the simple, also acinous glands, deciding by this against Frerichs (Wagner's *Handwörterbuch*, iii. 748) and Kölliker (*Mikroskop.-Anatom.* vol. ii. pp. 139 and 149), in favour of Bischoff (*Müller's Archives*, 1838, p. 515). We observe, therefore, no abrupt change in the structure of adjacent parts of the intestinal tube, but only a gradual one, single acinous glands being situated in the mucous membrane of the œsophagus, and a larger quantity of them in the duodenum.—*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Hentle's and Pfeuffer's Zeitschrift, f. ration. Medicin.* 1852, vol. ii.

3. *Pachionian Bodies.*—Self-evident though the axiom be, that makes the study of morbid anatomy dependent upon a correct knowledge of healthy parts, the instances are not infrequent in which pathological errors have been committed from mistaking a natural for an abnormal structure. Perhaps the so-called glands of Pacchioni have given rise to one of the most glaring instances of such error: first described by the above-named anatomist, in 1703, their structure, and their relations to disease of the membranes of the brain, have usually been much misunderstood; and physiological conditions having been erroneously supposed to be morbid, the natural consequence is, that what is really the result of disease has been overlooked. Professor ЛУСЕНКА (*Müller's Archives*, 1852, p. 101) has recently studied the Pachionian bodies, and the following is a summary of his results:—

The bodies in question, which are found closely connected both with the cerebral and the parietal arachnoid, along the course of the longitudinal sinus,

held by Sœmmerring to be granules of fat, and by Rokitsky and Hyrtl to be the products of inflammatory effusion, are in reality normal, as might, *à priori*, be supposed from their being found in all persons of all ages, although they may readily be confounded with actual inflammatory exudation under or upon the free surface of the membrane.

The Pacchionian bodies are found *only* near the mesial line, and are unconnected with disease of the subjacent pia mater, which is not found to adhere more closely in their vicinity, than elsewhere, to the arachnoid, from which latter membrane the granules in question cannot be torn, and of which they are indeed regularly-formed offsets.

Pacchionian Bodies of the Cerebral Surface.—On tearing off portions of the arachnoid from the mesial edge of the cerebral hemispheres, it separates easily from the pia mater, and carries with it the Pacchionian bodies, which appear under the lens as shaggy projections of its proper substance, of various form and size, as well as of very different number in different heads. They are usually smaller and less distinct the younger the individual, their size varying from that of a poppy-seed to that of a millet-seed. Their colour is gray or whitish, and their structure usually firm and fibrous; they are covered with a scanty epithelium, and contain no vessels. The curious cactus-like forms of these bodies are seen in Figs. 1, 2.

Pacchionian Bodies of the Parietal Surface.—The fibrous web of the dura mater, where it forms the longitudinal sinus, presents many irregular interstices over which the arachnoid is stretched, and into which it partly sinks. From these points, where the serous membrane is unsupported by the fibrous tissue, spring the Pacchionian bodies, presenting, as on the surface of the hemispheres, various shapes; pressing backwards through the dividing fibres of the dura mater upon the skull, and even into the canal of the sinus, and projecting forwards upon the surface of the brain, so as to come in contact with the Pacchionian bodies already described as springing from the cerebral arachnoid.

In the young, they are usually less prominent, and of simple shape; but in some cases, especially in subjects more advanced in life, they assume very complex, and often regularly beautiful, forms (Fig. 3), and in this case they interlace so closely with those springing from the cerebral arachnoid, that, on removing the dura mater, both folds of serous membrane come away together, an occurrence often erroneously attributed to pathological adhesions.

Morbid Conditions of the Pacchionian Bodies.—The most remarkable of these is hypertrophy, observed chiefly in old persons; in consequence of which, masses

Fig. 1.



Fig. 2.



Pacchionian bodies; after Luschka. 50 diameters.

Fig. 3.



Pacchionian bodies.—After Luschka. 50 diameters.

of considerable size are formed, and, pressing into the longitudinal sinuses, sometimes seriously impede the current of the blood. At other times small tumours are produced, which are often mistaken for fungus of the dura mater, and which we ourselves have once or twice noticed as the apparent cause of sudden death by their pressure on the surface of the brain, a pressure the force of which was manifested by their having formed deep pits in the skull above, all but penetrating its substance.

The Use of the Pacchionian Bodies is unknown. It can only be guessed that they may in some way protect or strengthen the veins, as these enter the longitudinal sinus, in man, the only animal in whose head the bodies in question have been detected.—*Association Journal*, Jan. 1853.

4. *On the Reproduction of Nervous Substance, and on the Structure and Functions of the Spinal Ganglia*.—Dr. A. WALLER, after having made many experiments on different animals, principally warm-blooded ones, of an early age, and frogs, considers himself entitled to the conclusion: "That the old fibres of a divided nerve never gain anew their original structure and function, and that the reproduction of nervous substance does not take place merely in the cicatrix itself, but also downwards into the terminating ramifications. The old fibres gradually waste, and after a month or later, new fibres are formed, which are pale and transparent, possess no double contour, present a very unequal diameter, being on the one place very thin, on the other varicose, like the fibres of the spinal marrow. In the peripheral part of the glosso-pharyngeal nerve of a frog, three months after the section, their size was only about one-sixth to one-third of the original fibres; they resembled, therefore, much more the ramifications of the nerve in very young frogs. In the central part of the cut nerve the fibres remain unaltered. Concentrated acetic acid dissolves the membrane of the newly-formed fibres, leaving fusiform nuclei; the membranes of the original fibres are completely dissolved, no nuclei being left. The reproduction of fibres, and the return of function, proceed in the same proportion. Of great importance are Dr. Waller's experiments for the understanding of the structure and function of the ganglia. While, as he has previously shown, all motor nerves, separated from their cerebro-spinal centre, become entirely changed in their microscopic appearance, the peripheral part of the sensitive spinal nerves, the root of which is cut through between the spinal cord and the spinal ganglion, remains unaltered as long as the connection with the ganglion is maintained. Ten or twelve days after having divided one or both of the roots of the second cervical nerve, he was enabled to make the following observations: 1. That part of the sensitive nerve which is situated between the place of division and the ganglion, is disorganized in the same manner as any dissected nerve in its peripheral end. 2. Tracing the disorganized fibres into the interior of the ganglion, they are seen mixed with normal fibres; the disorganized ones appear to pass into ganglionic globules, which are likewise altered, seeming to be deprived of their contents, and to consist merely of a thin, indistinct membrane. 3. The normal fibres appear to end by very thin filaments passing into normal ganglionic globules. 4. All the fibres originating within the ganglion are in their normal state. 5. The motor fibres are completely disorganized in the whole of the peripheral part of the nerve (no motion is produced by galvanism, or any other stimulus). 6. After having divided only the posterior root, all the fibres below or on the other side of the ganglion were normal. 7. After having divided the nerve below the ganglion, or after having cut out the ganglion, all the fibres in the peripheral part were disorganized. It is evident from this, that the spinal ganglion acts as a nervous centre for the sensitive fibres, but not for the motor ones. Dr. W. promises to give soon more detailed observations, as well on the same subject as on the function of the nervus vagus and sympathetics.—*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Müller's Archives*, 1852, No. 4.

5. *On the Muscles which open the Eustachian Tube*.—JOSEPH TOYNBEE, Esq., F.R.S., read an interesting paper on this subject before the Royal Society on the 17th February last. He commenced by alluding to the opinion generally held

by anatomists, viz., That the guttural orifice of the Eustachian tube is always open, and that the air in the tympanum is constantly continuous with that in the cavity of the fauces. An examination of the guttural orifice of the tube in man and other animals has led the author to conclude that, except during muscular action, this orifice is always closed, and that the tympanum forms a cavity distinct and isolated from the outer air. The muscles which open the Eustachian tube in man are the tensor and levator palati, and it is by their action, during the process of deglutition, that the tubes are ordinarily opened. That the act of swallowing is the means whereby the Eustachian tubes are opened, is shown by some experiments, of which the following may be cited: If the mouth and nose be closed during the act of swallowing the saliva, a sensation of fulness or distension arises from the air, which is slightly compressed in the fauces, passing into and distending the tympanic cavities. Upon removing the hand from the nose, it will be observed that this feeling of pressure in the ears does not disappear, but it remains until the act of deglutition is again performed, while the nose is not closed. In this experiment, the Eustachian tubes were opened during each act of deglutition; during the first act, while they were open, air was forced into the cavity of the tympanum by the contraction of the muscles of the fauces and pharynx, and the guttural orifices of the tubes remained closed until the second act of swallowing, which opened the tubes, and allowed the air to escape. That the act of deglutition opens the Eustachian tubes was inferred also from the custom usually adopted of swallowing while the descent in a diving-bell is performed; by this act the condensed air is allowed to enter the tympanum, and the sensation of pain and pressure in the ears is removed or entirely avoided. The author gives an account of the Eustachian tube and its muscles in mammalia, birds, and reptiles. In some mammalia the muscles opening the tubes appertain as in man to the palate; in others, this function is performed by the superior constrictor muscles of the pharynx. In birds, it is shown that there is a single membranous tube into which the two osseous tubes open; this membranous tube is situated between, and is intimately adherent to, the inner surface of each pterygoid muscle, and by these muscles the tube is opened. The conclusion to which the author arrives respecting the influence of the closed Eustachian tubes, is, that the function of hearing is best carried on while the tympanum is a closed cavity, and that the analogy usually cited as existing between the ordinary musical instrument the drum and the tympanum, to the effect that in each it is requisite for the air within to communicate freely with the outer air, is not correct. On the contrary, the author shows that no displacement of the air is requisite for the propagation of sonorous undulations, and that, were the Eustachian tubes constantly open, these undulations would extend into the cavity of the fauces, there to be absorbed by the thick and soft mucous membrane, instead of being confined to the tympanic cavity, the walls of which are so peculiarly well adapted to the production of resonance, in order that they may be concentrated upon the labyrinth.

In corroboration of the above views, the author states, that in cases of deafness, dependent simply upon an aperture in the membrana tympani, whereby the sonorous undulations are permitted to escape into the external meatus, the power of hearing has been greatly improved by the use of an artificial membrana tympani, made of very thin vulcanized India-rubber, or gutta-percha, which is so applied as again to render the tympanum a closed cavity.—*Med. Times and Gazette*, Feb. 20, 1853.

G. *Specific Gravity of the Brain*.—Dr. W. H. O. SAKSEY has published, in the *British and Foreign Medico-Chirurgical Review* (January, 1853), the analysis of 77 observations made upon the specific gravity of the brain. These render probable the following general conclusions, viz.:—

That the mean specific gravity of the gray matter, in either sex, is 1.034; that the density of the gray matter is somewhat below the mean in the earlier and later periods of life; that the highest density is met with between the ages of 15 and 30 years in males, and between 20 and 30 years in females; that the density of the gray matter is, in a slight degree, lower in those persons

who have died after a long illness, and greater, to a slight extent, in those subjects examined before twelve hours after death than in those examined at later periods.

That the density of the gray matter may be found in a subject after death to be .006 below the mean, without any cerebral symptoms having been present during life; but when the specific gravity exceeds the mean by .006, then one of the following conditions has existed during life, viz.: either acute cerebral disease, attended with head symptoms of the gravest character, or chronic disease (in all the cases analyzed of chronic disease of the kidneys), attended either with no cerebral symptoms, or only with slight delirium.

That the mean specific gravity of the white matter after death is 1.041; that its density varies less than that of the gray matter in the sexes, or in the different periods of life; that it is much less affected by *post-mortem* changes or length of the last illness.

That in those cases in which the gravest cerebral symptoms were present during life, the density of the white matter after death may present two opposite conditions—either it may exceed the average, or it may be much below the mean.

That high specific gravity of both gray and white matter is found in conjunction with those morbid conditions of the brain connected with hyperæmia, and that a low specific gravity exists in conjunction with the opposite condition of the brain.

That no relation appears to exist between the specific gravity and the actual weight of the brain.

7. *On the Existence of Semen in Aged Men.* By M. DUPLAY.—It is a long-established notion that the secretion of semen is entirely arrested in old men, and in this way their loss of procreating power is accounted for. This idea was refuted by the researches of Fischer, who found seminal fluid in abundance in the vesiculæ and testes of a man aged 94.

After the discovery of the spermatozoa, it was then concluded that the semen of old men did not contain them, and thus accounted for their impotency. Some isolated and imperfectly conducted examinations of the fluid, apparently warranted this idea. Such an opinion, however, is not compatible with the well-authenticated cases, and too numerous to be false, of the procreating power of old men. Wishing to arrive at more positive and authentic data, M. Duplay examined the fluid contained in the seminal apparatus in 51 aged subjects. Apart from the consistence, colour, and other less important properties, in 37 cases spermatozoa were found, which, in 27 cases, were perfectly formed, the head large, tail long, and curved; in a word, not differing from that of the adult, and in some instances as abundant.

Amongst these 37 examined, 8 were sixty years old; 20, seventy; and 9, eighty. Also in the 7, where the spermatozoa were as numerous as in the adult, the minimum age was seventy-three, and the maximum eighty-two. In these subjects, 21 died of acute and 16 of chronic affections, giving rise to that wasted condition which, according to some observers, causes their disappearance in the adult.

Nevertheless, if this secretion possesses, occasionally, at this age, the same power and regularity in its effects as at an earlier period of life, it is not always so; for M. Duplay could not find any spermatozoa in 14 of the cases examined; also, in some, there was a remarkable modification in their structure, abundance, or seat. The tail or head was occasionally deformed, some having a very short tail, others having virtually no head. Small crystalline masses were also seen, but their nature could not be determined.

As to the quantity, the writer observed that, in 14 cases, though the spermatozoa were fully formed, they were very few in number; a few only being visible, isolated, in the midst of a liquid, containing little granules and the debris of epithelial scales.

As to their seat, the animalcules were found in 26 along the whole extent of the spermatic apparatus; in 3, the semen in the vas deferens alone contained them; that of the vesiculæ contained none; in 1, they were found in the resi-

culæ, and not in the vas deferens; and in 7, in the vesicula of one side, and not in the vasa deferentia.

These remarks are not only interesting, as being scientifically curious, but deduce some corollaries of use in a hygienic point of view. Thus, if old men become less apt for reproduction, it is not exclusively in the composition of their semen that the cause is to be sought for, but in some modification of the other acts necessary to this function. It may also be added, that if the semen continues to be secreted in the aged, it must have its use; but since, physiologically speaking, nothing then stimulates its evacuation, for the purpose of reproduction, may it not be concluded that it is destined to be reabsorbed, and thus, by its stimulating influence tend, in a certain degree, to keep up the vital force. This conclusion is supported by the researches of M. Gosselin, as to the existence of the same secretion in obliteration of the spermatic canals. It is proper to show the dangers which artificial ejaculations give rise to at this age, notwithstanding the abeyance and providential passiveness of those organs, to which the name of excitors may be given.—*Dublin Medical Press*, February 16, 1853, from *Gazette Medicale de Paris*.

MATERIA MEDICA AND PHARMACY.

8. *Action of Liquor Potassæ on the Urine in Health.*—Prof. E. H. PARKES, M.D., in an interesting paper published in the *British and Foreign Medical-Chirurgical Review* (January, 1853), records some observations instituted to determine the effect of liquor potassæ on the urine of a healthy individual preliminary to a similar inquiry into its action on the urine of diseased persons. The following is his recapitulation of the results which he has obtained:—

If liquor potassæ be taken soon after meals, its action is that of an antacid. It combines with hydrochloric or with lactic acid, and then, doubtless, passes into the circulation. What appreciable effect it now produces is not indicated in the tables above given, but it does not increase either the water, solids, or sulphuric acid of the urine. If the liquor potassæ be taken into an empty stomach, it passes unneutralized into the circulation, and probably through the veins; in so doing, it must produce an effect on the walls of the capillaries and small veins, but the extent of this cannot be known. As much as ʒij have been taken with only 4 ozs. of water, without causing epigastric pain or uneasiness (although it produced considerable temporary scalding of the mouth and throat), and without apparently producing any local effects in the stomach. In, usually, from thirty to ninety minutes after its entrance into the circulation,¹ an increased flow of slightly acid urine occurs, which contains the whole of the potash, organic matter differing considerably from that of ordinary urine, and a relatively large proportion of sulphuric acid; the phosphoric acid and the chlorine are less changed. Perhaps an organic acid (not uric, and probably not hippuric) is also present. The explanation of these facts is, that an albuminous compound, either in the blood itself or in the textures, has become oxidized: its sulphur, under the form of sulphuric acid, has united with potash, and, with possibly the changed protein-compound, is poured out from the kidneys. This oxidizing effect of the liquor potassæ is no doubt assisted by exercise, and by copious draughts of water; but in the above experiments, exercise and fluid were abstained from, in order not to complicate the results. The amount of albumen or fibrine destroyed by one drachm of liquor potassæ cannot

¹ This does not sufficiently appear from the facts in the text. I subjoin some particulars of another experiment, made when the system was not quite in a state of health. At a quarter past 4, liq. potassæ ʒj, water ʒiv, was taken.

At a quarter to 5, ʒij, ʒvj were passed . . .	= ʒv, ʒij per hour.
At a quarter past 6, ʒiv, ʒvij were passed . . .	= ʒix, ʒvj per hour.
At a quarter to 6, ʒj, ʒij were passed . . .	= ʒix, ʒiv per hour.

be considerable, but if the potash were continued in large quantities, oxidation could probably be pushed to any amount. The nitrate and acetate of potash did not in a *healthy system* have the same effects.

After the increased flow of urine, the quantity passed per hour falls slightly below the standard. It appears to resume its ordinary composition, but its exact condition at this period has not been determined. Some observations on urine in disease would lead me to infer that the uric acid will be found to be increased.

Such were the effects of liquor potassæ on the urine. The effect produced on other excretions was not obvious. The skin and the intestines appeared quite unaffected, and as all the potash was found in the urine, the reason of this is easily understood. In most of the experiments there were no subjective symptoms of any kind. On two occasions, there was rather sharp frontal headache, languor, depression, slight lumbar pain, and aching of the legs, after the large flow of urine. On the night of the 15th, when the flow of the urine, which was proceeding at the rate of 51ss per hour, was augmented in two and a half hours by 5xix, and no fluid was supplied to the system, the pulse became perceptibly small (almost thready) and slow; it remained equal and regular—there was no thirst, no shivering, and no nausea; the skin was dry and warm. In six hours the pulse had quite regained its force and frequency, and the other symptoms had disappeared without any fluid having been taken.

After the experiments were concluded, the general health did not appear impaired; it was, if anything, better than usual.

The effect of liquor potassæ on the diseased system is a much more difficult problem. The chemical conditions are not the same, and the effects of the potash are necessarily influenced by them. I will not now enter into this subject, but observe that it is necessary, when its oxidizing effects are desired, to give the potash eight or ten hours after food, to drink moderate quantities of water, and, if possible, to use exercise. The potash should be given pure, or with large doses of iodide of potassium, but unmixed with sugar. I may so far anticipate what will be hereafter said on this point, by stating that, administered in this way, it exerts a powerful effect on the exudations of inflammations, but appears less useful in the early stages, when an antagonistic force seems to be in action.

It remains to be seen whether the varying excretion of sulphuric acid, which is unaccounted for by diet and exercise, is occasioned by greater or less alkalinity of the blood producing variations in the amount of oxidation of the albuminous compounds.

9. *Action of Anthelmintics.*—Dr. KUCHENMEISTER, of Zittau, has examined the various vermifuges, by immersing the living intestinal worms of fowls, cats, and dogs, in albumen, at a temperature exceeding 77° Fahr., and adding the anthelmintics in the form of infusion or of powder. In some cases, a mixture of warm milk and water was substituted for the albumen. The experiments were not continued for more than from forty to forty-eight hours, if the worm had not been killed before the expiration of that time. Dr. Kuchenmeister made use of electricity as the most delicate reagent for proving the occurrence of the death of the worms. In the first place, electricity cannot be considered as a vermifuge. The author subjected a female *heterakis vesicularis*, taken from a partridge that had been killed, to the action of a rotatory apparatus, which was kept up with longer or shorter intervals during an entire day. The animal was not destroyed by the experiment. He next tried the remedies employed for the removal of tæniæ, and first tested koussou in the following manner: A living *taenia crassicolis*, procured from a cat, was placed at four o'clock in a mixture of albumen and dolichos pruriens. The worm appeared to be perfectly well in this mixture, and at two o'clock on the following afternoon exhibited the most vigorous movements. The tænia was now transferred to a vessel containing a mixture of infusion of koussou and some of the infused as well as some of the fresh powder with albumen. The temperature of the mixture was 39° R. (99.5° F.) On its introduction, the worm quickly extended itself; after some time it was found to be dead, its colour having changed to a dirty reddish-

yellow. Two *tænia serrata* were placed at about half-past one in the afternoon in a mixture of albumen and koussou; at two o'clock they were dying, and at three completely dead. Two *tænia serrata* from the same dog were brought in contact with koussou and milk at half-past one in the afternoon, and at two o'clock were dead. Two *tænia serrata* were placed at half-past one in the afternoon in albumen, mixed with decoction of pomegranate root and with some of the powdered root; they died in three hours. Two others were placed in milk mixed with the decoction only; they died in three and a half hours. A *tænia crassicolis* was put into a mixture of albumen with ethereal extract of male fern; it died gradually in three hours and three-quarters. A number of *tænia cucumerina* were placed in a mixture of albumen and oil of turpentine; they were dead in an hour and a quarter.

A number of the same were put into a mixture of albumen and castor-oil; they appeared lively at first, but were dead in seven hours. Similar worms were put into a salad, composed of pieces of unwatered herring, boiled potatoes, large pieces of onion and garlic, albumen, vinegar, and a large quantity of oil. They died in eight hours. Lastly, the author tested the vermifuge powers of the brown oxide of copper; fifteen grains were administered in the course of four days to a strong cat. When the body was opened, the entire intestinal canal was found to be full of fluid, yellow, flaky feces; the intestine was softened, and denuded of epithelium, especially at the termination of the ileum, where the adjoining Peyer's glands were much swollen, particularly in two situations, one of which was an inch and a half long by one-third of an inch broad; the other was nearly circular, and its diameter one-third of an inch. The cat had been purged. The *tænia* and ascarides it contained were lively. It would hence appear that this substance is both inefficacious as a vermifuge and dangerous to the system. The following table contains the results of the above experiments:—

In milk boiled with koussou, <i>tænia</i> died in half an hour.	
In a mixture of oil of turpentine and albumen, in . . .	1 to 1½ hours.
In decoction of koussou with albumen . . .	1½ " 3 hours.
In decoction of pomegranate root with milk . . .	3 " 3½ "
In decoction of pomegranate root with albumen . . .	3 " "
In ethereal extract of male fern with albumen . . .	3½ " 4 "
In castor-oil with albumen . . .	8 " "
In salmagundi with garlic and onions . . .	8 " "

Koussou would therefore seem to be the most efficacious remedy against *tænia*. When pomegranate bark and male fern root fail, their failure may be owing to the habit of administering a laxative in from four to six hours after the exhibition of the vermifuge, by which the latter may be carried beyond the worm. With regard to pomegranate root, it must be observed, that in large doses it occasions diarrhoea. The same remark applies to castor-oil. The author also alludes to cold water, strawberries, *dolichos pruriens*, and filings of tin. When *tænia* are placed in water containing ice, they are instantly benumbed, and if allowed to remain in it, they will always be found at the end of ten hours to be quite dead. Strawberries may be useful as a mild remedy in cases of tape-worm; if large quantities of them be taken on an empty stomach, entire portions of the worm will often be passed. *Dolichos pruriens*, with which the author tried many experiments, appears to possess no power of destroying worms. The author has also minutely studied the medicines recommended for the removal of round worms. In albumen, these worms behave as the *tænia*; in water, at about 77° F., they live for some days, but swell, stiffen, become longer, thicker, and more sluggish; they lose their power of suction, and their motions become slow and only partial; they resemble leeches which have gorged themselves. In general, however, the males and young neutrals resist the effects of water longer than the mature, impregnated, egg-bearing females, which become quite rigid and inflexible, and swell considerably. Milk and whey affect the worms like water. The following are the medicines, the effects of which were tested:—

1. Camphor. An ascaris lived from eighteen to twenty hours in albumen

into which some camphor had been introduced. 2. A mixture of oil of turpentine and albumen killed some ascarides which were placed in it in from two and a half to six hours. 3. Ascarides lived forty hours in albumen and worm-seed, whether the latter was employed in the form of powder or infusion. 4. Some ascarides were placed in albumen mixed with santonine; they did not die in it, nor did they die in a watery infusion of santonine. When santonine was dissolved in oil, especially in castor-oil, and mixed with albumen and ascarides, the latter died in ten minutes. An injection of santonine and castor-oil was thrown up the rectum of a cat, and produced numerous motions containing dead worms; and on killing the cat, the entire of the lower portion of the intestinal canal was ascertained to be free from worms, while four were found near the stomach quite rigid and extended, and retaining but little life. A *tenia crassicolis*, however, was found in the intestines, and appeared to be quite uninjured and very lively. 5. A mixture of albumen and aniseed, with a strong infusion of the latter, killed the worms in about twenty-four hours. 6. Parsley, mixed with albumen, killed ascarides very slowly. 7. Flour of mustard and albumen destroyed them in about four hours. 8. In rue, the worms lived upwards of twenty-four hours. 9. The same was the case with millefoil. In contact with tansy, valerian, and chamomile, great numbers of them lived for twenty-four hours. With onions and garlic they perished in from ten to fifteen hours. A decoction of cloves, with or without albumen, killed them in twelve hours. In an infusion of ginger, with or without albumen, they lived about twenty-four hours. Petroleum, mixed with albumen, killed them in less than six hours, as did also oil of cajeput and albumen.

A series of vermifuges, taken from the class of balsamics, was tried in like manner, namely, assaetida, ammoniacum, balsam of Peru, extract of juniper, and Venice turpentine. In all these the worms lived more than twenty-four hours. Of the class of empyreumatics (brenzlichen stoffe), the following were tried: Oleum chaberti [a mixture of four parts of oil of turpentine, and one of the animal oil of Dippel], oil of amber, castor-oil, tar-water, creosote, wood-vinegar, and wood-soot. In these, for the most part, the worms lived from twenty-four to forty-eight hours, except the wood-vinegar, in which they lived rather more than twelve; and creosote, in which they died within two hours. Of bitters, the author tried aloes, gamboge, ox-gall, wormwood, myrrh, gentian, quassia, hops, bitter orange, and acorus calamus; in all these the ascarides lived from twenty-four to forty hours. Of astringents, pure tannic acid, pomegranate root, koussou, extract of walnuts, cinchona bark and quina, elm bark, willow bark, the flowers and stalks of meadow-sweet, oak bark, dragon's blood, catechu, and kino. In these, the worms died in from twenty-four to thirty hours, with but two exceptions, namely, tincture of galls and pomegranate root, both of which killed them in the space of eleven hours. Of saline preparations, sulphate of soda, chloride of sodium, and the roe of the herring, were tried. In the first, the worms died in from fifteen to eighteen hours; in the second, in from two to six; and in the roe of the herring, in four hours. The following metallic poisons were experimented on: Arsenic, calomel, corrosive sublimate, and the salts of tin, of lead, and of copper. Corrosive sublimate alone destroyed the worms in so short a time as two hours; all the other metallic salts required a much longer period. From these experiments it would appear that santonine, mixed with oil, is a most powerful vermifuge, then chloride of sodium, the roe of the herring, garlic, onions, &c. The author advises that santonine should be given as a vermifuge; mixed with oil, in the proportion of from two to five grains to an ounce of castor-oil. This solution should be given in the doses of a teaspoonful until the effect is produced. As auxiliary treatment, chloride of sodium, herring-brine, mustard, onions, and garlic, may be employed.—*Dublin Quarterly Journal*, February, 1853, from *Forrier's Tagesschriften über die Fortschritte der Naturund Heilkunde*.

10. *Tincture of Mastic as a Hæmostatic*.—It is stated in a recent number of *Schmidt's Jahrbücher*, that Dr. FRANKL has found the tincture of mastic an excellent hæmostatic. He employs it in epistaxis, and in troublesome bleeding from leech-bites. It is applied to the points whence the blood issues, by means

of a camel's-hair pencil. Terzer, a dentist of Vienna, is also reported to have used it successfully in hemorrhage following the extraction of teeth.—*Association Medical Journal*, Jan. 14, 1853.

11. *Hyposulphite of Soda and Silver as an occasional Substitute for Nitrate of Silver*.—Dr. J. DELIOUX, of Cherbourg, brings the hyposulphite of soda and silver under notice, as a therapeutic agent, in the *Bulletin Générale de Thérapeutique* for October 15 and November 15, 1852. He prepares it by pouring a solution of hyposulphite of soda on oxide of silver, recently precipitated by potassa, until it is completely dissolved. On evaporation, minute crystals of hyposulphite of soda and silver are left. The salt appears as a grayish-white crystalline powder, of sweetish taste, leaving a slightly styptic flavour; it is very soluble in water, but insoluble in alcohol. It becomes black on long exposure to light, but preserves its colour indefinitely when kept in bottles of coloured glass, or covered with paper. The solution becomes black when exposed to diffused light, but much more slowly than that of the nitrate of silver. When pure, it does not discolour the epidermis or linen. Its power of coagulating albumen, and hence its astringency, is small compared with that of the nitrate, and its local action is less irritating.

From various experiments, Dr. Delieux concludes: First, that for external use, the hyposulphite of soda and silver may be employed in larger doses than the nitrate of silver; and that in these doses it is much less irritant, and incapable of producing a true eschar: Secondly, that for internal use, if it is sufficiently diluted, there is no risk of injuring the mucous membrane of the stomach. Moreover, as its solution does not coagulate albumen, nor form a precipitate of chloride of silver, it will be readily absorbed by the veins of the stomach.

Dr. Delieux has had an opportunity of administering the salt in only one case of epilepsy. Here it was unsuccessful as far as the epilepsy was concerned; but it produced no blackening of the skin, or any physiological disturbance beyond excessive hunger. But the author very justly points out that no inference can be drawn from a single case. He gradually increased the daily dose from 5 to 60 centigrammes ($\frac{1}{3}$ of a grain to 9 grains).

As an external application, Dr. Delieux uses the hyposulphite as a substitute for nitrate of silver, in cases where a local alterative is required which shall produce less irritation, and act chemically on the tissues less than the latter salt. It should be tried in obstinate ulcers, as an injection into purulent collections and into sinuses, in chronic fluxes of the external ear and of the nasal fossæ, and as a collyrium in diseases of the eye. Among the latter, Dr. Delieux can only cite from experience cases of acute conjunctivitis, which he has often found benefited, after the inflammatory stage has passed, by a dilute solution of this salt.

Dr. Delieux has employed the hyposulphite of soda and silver most frequently in acute and chronic urethritis; and here he has found it most efficacious, especially in chronic cases, and at the end of the acute stage. He does not set it forth as a specific, nor as pre-eminent among local remedies; but as one to which recourse may be had among others. He generally uses an injection of from 50 centigrammes to a gramme (7½ to 15 grains) of the salt in 100 grammes (about three ounces) of distilled water. It produces little or no pain, and does not act as an astringent.—*Association Medical Journal*, Jan. 14, 1853.

12. *New Mode of Applying Leeches*.—Dr. SLOAN states (*Monthly Journal of Medical Science*, Aug. 1852) that he has hit upon a plan by which very indifferent leeches may be rendered most efficient bloodsuckers.

"The idea," he says, "first occurred to me some years ago, while waiting the effect of a dozen, which were remaining attached to the skin, but scarcely drawing blood.

"It struck me that, as leeches are remarkably influenced by atmospheric changes, it might be worth while trying the experiment of partially exhausting the air over them, and thus inducing the sensation of a low barometer. On covering them with a cupping-glass, and by means of the air-pump producing

a moderate degree of rarefaction, an immediate change in the style of sucking took place; the leeches displayed an activity I have rarely seen equalled by those of the best quality when applied in the usual way; they rapidly became fully distended, and fell off. By continuing the exhausting process afterwards, which is a common enough practice, a sufficient quantity of blood was readily obtained: and I remarked that the erysipelatous appearance, which usually followed leech-bites, in this patient was prevented.

"It is quite possible that the increased activity under the exhausted cupping-glass may arise from the skin being rendered more vascular, and thus yielding its blood more readily; or we may even view the leech in these circumstances as an elastic sac, communicating with the circulation by a firm canula, so that the blood may flow into the animal without much exertion on its part; but, whatever the cause, the result will be found satisfactory. I have never had occasion to try the effect of snipping off the tails of the animals under this plan, but possibly it would be eminently successful.

"The operation is almost as quickly performed as cupping, and has this advantage, that it requires no dexterity. I think any nurse of ordinary intelligence might acquire the necessary skill in a single lesson.

"In charitable institutions, this plan would be especially advisable, as by it two leeches might be made, on the average, to do the work of three, thereby effecting a considerable saving, and the necessary apparatus would always be at hand. Nothing could be better for the purpose than those cupping instruments in which the vacuum is produced by an air-pump. Increasing the vascularity of the skin by a cupping-glass previous to applying the leeches, seems to make them bite more readily, probably by rendering the odour of the blood more perceptible."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *General Pathology and Treatment of Dyspepsia.* By Prof. J. H. BENNETT. —By dyspepsia (from *δυσπεπτις*, to digest with difficulty), is generally understood, all those functional derangements of the stomach which are primary in their origin, that is, not dependent upon, or symptomatic of, inflammation or other disease in the economy. Such a disordered condition is exceedingly common, and often constitutes the despair of the physician, arising, as it frequently does, from causes which are often obscure, or, if discovered, are beyond his control. This will become apparent by considering, in the first place, those circumstances which require to be united to secure a healthy digestion. These are—1st. A proper quantity and quality of the ingesta. 2d. Sufficient mastication and insalivation. 3d. Active contractility in the muscular coat of the stomach. 4th. Proper quantity and quality of the gastric, biliary, and pancreatic fluids. 5th. A consecutive and harmonious action of the intestinal canal. Dyspepsia, or indigestion, may be produced by any cause which occasions derangement of one or more of these conditions; and hence why so many different circumstances may produce somewhat similar symptoms, and why so many different remedies have been found effectual in various cases. Notwithstanding that you will frequently meet with instances which baffle all preconceived rules, there can be no doubt that a careful attention to the essential physiological conditions above enumerated will, in the great majority of cases, conduct you to a successful rational treatment. Thus—

1. Of all the causes of dyspepsia, excesses in eating and drinking are the most common. An over-distended stomach, or too rich a meal, not unfrequently induces a feeling of weight or fulness in the epigastrium, nausea and eructation of acid, bilious or gaseous matters, with a loaded tongue, headache, and other general symptoms. This is acute dyspepsia, or the *embarras gastrique* of the French. Occasionally, there is more or less vomiting of bilious

matter, when the attack is vulgarly called a *bilious seizure*. If called into such a case, immediately on its occurrence, and before the ingesta have left the stomach, as determined by the sense of load at the epigastrium, an emetic should be given; but if vomiting be present, it should be assisted by warm diluents. As soon as the stomach is quieted, or, if you have been called in at a late period, when the ingesta have passed into the intestines, a purgative pill should be administered, consisting of four grains of calomel, with four of compound extract of colocynth, followed in a few hours by a purgative draught of salts and senna. If necessary, an enema may also be given. The purging, with a day or two's confinement to farinaceous food, will generally get rid of such an attack; but their frequent repetition leads to the chronic form of dyspepsia, when careful regulation of the diet, with exercise, must constitute the chief treatment. Hence the advantage of what is called "change of air," and much of the benefit which is derived from watering-places. Chronic dyspepsia, however, is far more commonly caused by excess of spirituous and vinous drinks, than by eating, when abandonment of the evil habit is a *sine qua non* in the treatment. Ten-drinkers are very liable to the disease, and its frequency among female servants is probably owing to this cause.

2. It may frequently be noticed, that those who have acquired the habit of eating rapidly are more or less dyspeptic. I knew a journeyman printer who was much tormented with indigestion, but who was cured by changing his residence. The cause of this was for some time a mystery, but on again changing his house the disease returned, although no apparent cause could be discovered. I ascertained, however, that it depended not on the locality *per se*, but on its distance from the printing-house. When far off, he eat his dinner with his family rapidly, having only just time enough to walk home and back within the hour. When he lived near, the time otherwise spent in walking was occupied in eating, or in cheerful converse with his wife and family. Since I made this observation, it has often occurred to me that the distant residence of artisans from their place of employment may be the occasional cause of the dyspeptic symptoms they frequently possess. With regard to the exact object of the saliva in the process of digestion, whether it be to convert the farinaceous compounds of the food into glucose, or, by its viscidly, to mix up air with the portions swallowed, is not positively determined; but its necessity for the digestion of man is shown by cases where the under lip has been lost by accident or disease, and where salivary fistulæ have formed, in which dyspepsia is generally present, and in which the disordered digestion has been cured by operations that, by restoring the parts to their normal condition, prevent the escape of saliva. Again, persons habituated to the dirty habit of spitting, are for the most part dyspeptic; and it has been asserted that the pale countenances of the inhabitants of the United States, and the leanness of their persons, are owing to this cause. In all cases where dyspepsia can be traced to this source, the treatment must be obvious.

3. The contractile movements of the stomach, which, by kneading the ingesta, and keeping them in constant motion, secures an intimate admixture with the gastric juice, and the rapid transference to the duodenum of such portions of it as are transformed into chyme, are evidently of immense importance to a proper performance of digestion. The experiments of physiologists have shown that digestion in gastric juice out of the stomach is much slower than in it, and that section of the pneumogastric nerves, by arresting the contractile movements, only permits the circumference of the mass in contact with the secreting surface to be digested. These facts at once explain the well-known influence of mental emotions upon the stomach. Contentment and hope are as favourable, as dissatisfaction and despondency are opposed to, good digestion. Nothing is more common than dyspepsia among literary men who overtask the mental faculties; among young persons of very excitable minds; and among individuals of a melancholy temperament, hypochondriacs, etc. etc. It is in such cases that cheerful society, active and appropriate occupations, change of scene, removal from mercantile or literary employments, different trains of thought, and so on, are beneficial. Hence also many of the good effects of travel, visiting watering-places, etc. etc.

4. Our knowledge with regard to the offices performed by the gastric, biliary, and pancreatic juices in digestion has of late years been much advanced. Thus, the gastric juice more especially operates on the albuminous, and the pancreatic juice on the fatty compounds of the food. The function of the bile is perhaps more obscure, although it probably acts as a means of precipitating or separating some of the excretory matters from chyme, and so facilitates assimilation of the nutritive portions. Digestion may be deranged by all those causes which too much increase or diminish the secretion of these three fluids. Thus excess of acidity in the stomach is one of the most common causes of dyspepsia, producing that form of it which accompanies scrofulous and tubercular diseases. It may be in such excess as to neutralize the alkaline action of the pancreatic juice, and render it difficult or impossible to emulsify fatty matters. In such cases, alkalies, with bitter tonics and the direct introduction of animal oils in excess, are indicated. On the other hand, the gastric juice may be diminished in quantity, as frequently occurs in persons who suddenly overtask the powers of the stomach at feasts, or in old persons with feeble digestion. The sense of load after eating is generally indicative of slow digestion from this cause. In acute cases, a stimulant rouses the stomach to increased action, and hence the moderate use of drams and generous wines after dinner is occasionally useful. In old persons, the sense of load and feebleness is best removed by giving up tea, and drinking at night a little weak brandy and water. In chronic cases, acids are indicated, especially muriatic acid. The tr. ferri co. of the pharmacopœia, is a useful preparation in chlorotic females. We have no distinct means, as far as I am aware, of rousing the pancreas into action, and yet many cases are on record in which fatty matters have passed undigested through the alimentary canal in consequence of obstruction to the pancreatic duct. In such cases, and all those in which fatty matters are difficult to digest, alkalies, especially the liquor potassæ, with vegetable tonics, are indicated. When the bile is deficient, constipation and dyspepsia are usual results, and are to be relieved by gentle mercurial purgatives, with extract of taraxacum, and by remedies such as rhubarb, and especially the compound rhubarb pill, which, by acting on the duodenum, also favours the flow of bile into the upper part of the alimentary canal. Dr. Clay, of Manchester, has recommended in such cases the administration of ox-gall, a remedy, which, although not extensively given, is evidently rational, and calculated by its purgative action to be highly serviceable. Excess of bile, on the other hand, ought to be treated by drastic purgatives, diuretics and diaphoretics, according to circumstances, to cause excess of excretion. Exercise should also be insisted on to call the lungs into action, and thus relieve the liver in its office of separating hydrocarbon.

5. A derangement of the consecutive and harmonious action of the alimentary canal is another frequent cause of dyspepsia; for it is as necessary that those portions of the food which are not assimilable should be removed out of the economy, as that the nutritive materials should be absorbed. Hence, whatever impedes the contractility of the intestinal canal, whatever alters the structure of its mucous membrane, or whatever mechanically obstructs its caliber, may always be observed to induce dyspeptic symptoms. The removal of these various conditions, whether by stimulating the nervous centres, by appropriate diet, or by purgatives and astringents, as they may be required, need not be more particularly dwelt upon.

In many cases of dyspepsia, two or more of these classes of causes may be combined, so as to render the indications for treatment complex and apparently contradictory. In other cases, one or more causes may exist, although from the indications presented they cannot be determined, when our treatment must always be more or less vague and unsatisfactory. Lastly, there are a few instances where dyspepsia can only be explained by *idiosyncrasy*, in which we find this or that particular article of diet to derange the digestive functions, and in which avoidance of the offending cause is the only plan that is attended with success.

In addition to the different kinds of dyspepsias to which I have directed your attention, it is practically important to keep in remembrance the leading

symptoms which may be present, and the remedies by which they may be removed. These are anorexia, acid eructations, sense of load in the stomach, cardialgia, vomiting, flatulence, palpitations of the heart, and cephalalgia. Some persons talk of a stomach cough, which, however, is more commonly dependent on irritations in the œsophagus or pharynx, which have hitherto been overlooked. I have already alluded to the mode of treating most of these symptoms. Palpitations of the heart often occasion alarm in young dyspeptic persons, and in addition to remedies directed towards the stomach, change of scene, removing attention from the affected organ, and varied reading should be enjoined. The sense of load in the stomach is most frequently removed, as we have previously said, by acids, whilst acid eructations and cardialgia are best relieved by alkalies and bitter tonics. Vomiting and flatulence are often very troublesome symptoms, and the varied remedies which may be employed in a case of chronic vomiting may be gathered from the following history:—

CASE.—*Dyspepsia*.—*Vomiting of Fermented Matter containing Sarcinae*.—Thomas Spence, æt. 53, a weaver. Admitted September 6, 1852. He states that, for fourteen or fifteen years past, he has been subject to occasional vomiting, which generally occurred on Sundays, owing, he supposes, to want of exercise at his usual employment. On these days he scarcely ever took his meals from fear of the almost certain vomiting which would follow. For two or three years past he has been liable to frequent heartburn, water-brash, and acid eructations, but was able to continue at his usual employment till about six months ago. Since then, he has been gradually losing his appetite, and his strength has become much prostrated. He has never vomited blood or any dark-coloured matter, and has never passed any such by stool. On admission, tongue clean; no difficulty in deglutition; appetite capricious, but always best in the morning and early part of the day. Shortly after taking food, he begins to have uneasy sensations in the epigastrium, sickness, and a sense of weight at the stomach. When these symptoms appear, the abdomen generally begins to swell, and in about an hour to an hour and a half, the food is frequently vomited. The rejected matters consist generally of the half-digested food, with a thick, dirty, frothy scum on the surface, resembling yeast. He has also frequent pyrosis, acid eructations, and flatulence, the latter sometimes so great as to occasion a sensation of choking, especially after vomiting. These symptoms are worse after some kinds of food than others: oatmeal, especially in the form of porridge, produces them in the severest form; broths, vegetables, or any kind of slops, do not agree with him; animal food suits him best, but when even this is taken for any length of time, the symptoms soon reappear. The abdomen at present is much swollen, very tense, and tympanitic on percussion, with considerable tenderness over the epigastrium. The bowels are generally constipated; the stools usually of a dark colour and hard consistence. He has occasionally slight pain and difficulty in voiding his urine, which is slightly phosphatic. Other functions are normal.

On taking charge of this patient on the 1st of November, I found him vomiting from time to time large quantities of fluid mixed with undigested matters, on which there gathered, after a short time, a thick brownish scum, exactly resembling yeast. On examining this scum with the microscope, it was ascertained to contain a large number of *sarcinae ventriculi*, mingled with starch corpuscles, more or less broken down, and granular matter. From the vial-books, I learned that his treatment had consisted in the successive administration of—1. The local application of leeches; 2. Of the sulphite of soda, in scruple doses, with two grains of aromatic powder three times a day; 3. Of half a grain of protochloride of mercury at night; 4th. Of a scruple of the sulphite of soda every three hours, which was subsequently increased to half a drachm; 5. Of crocus mixture; 6. Of a naphtha mixture; 7. Of bismuth and aromatic powders; and 8. Of pills of calomel and opium. These different kinds of treatment, some of which, especially that of the sulphite of soda, had been continued for several weeks without intermission, seemed to have produced no good effect.—November 11. During the last four days, he has vomited every night, four hours after dinner, that is, about 6 P. M.

The ejected matter presents the same yeast-like character formerly described; but the sarcinae, though still abundant, are not so numerous. He complains of a great sense of distension, and a feeling of "working" or "bubbling" in the stomach shortly before vomiting. R. Acid. hydrocyan. dil. M. xviii; Syrup. aurant. ʒj; Aquæ ʒii; M., half an oz. three times a day.—November 20. The hydrocyanic acid checked the vomiting till last night, when it returned with more violence than ever.—November 24. Vomiting still continues regularly every day. Omittantur mist. acid. hydrocyan. R. Liquor potas. ʒss; Aquæ ʒvss. Two table-spoonsful to be taken every four hours.—December 2. Alkaline mixture again checked the vomiting, which, however, returned last night to a slight degree. Applacet vesicat. 4 x. 5 Epigastrio.—December 8. Vomiting has once more returned daily since last report. R. Tinct. ferri muriat. ʒj. Sumat ʒss *ter in die ex aqua*.—December 16. The vomiting has been again checked, but once more returned in a slight degree at 1 o'clock this morning. The matter ejected exhibits very little of the usual frothy scum, but consists of a brown liquid-like coffee, with a few shreds of undigested food. It is of intensely acid reaction, and contains only a few sarcinae. The dose of the acid tincture has been reduced to M. xv. The diet during this period has been principally animal, porridge and vegetables invariably increasing his complaint. To-day he left the hospital to visit his friends in the country, expressing himself as greatly relieved.

Commentary.—The kind of chronic vomiting and dyspepsia which is above described has been long known in Scotland, and was described by Cullen as a form of pyrosis. It has been supposed to be associated with the habit of largely consuming oatmeal as a principal part of the diet, although its real pathology was unknown. In 1843, Mr. Goodsir discovered in the ejected matter from the stomach, in a case of this kind, organized forms, which, from their resembling a woolpack, he denominated *sarcinae*. He considered that they were of a vegetable nature, and by multiplying dissimilarly, communicated to the contents of the stomach the appearance of yeast, which is also known to be dependent on the development and growth of vegetable structures. This occurrence in the stomach of course explains their frequent presence in the feces, although, whether they ever are developed in the intestines is unknown. On one occasion, however, I have seen them in the urine, which occurred in the case of a gentleman under the care of Dr. Mackay, of this city. The *sarcinae vesicae* were in that case uniformly smaller in size than the *sarcinae ventriculi*. They have also been discovered in an abscess of the lung by Virchow. The exact mode of formation and origin of these structures are unknown; but little doubt can exist that their presence is the real cause of the chronic vomiting and other symptoms of the individuals affected, and that the cure will depend on such means as are capable of insuring their destruction and preventing their return. It must be obvious, however, that the same means which destroy or check vegetable growth on the surface of the body (see Fungus), are not applicable to the mucous lining of the stomach. Besides, we are ignorant whether these parasites grow in an exudation poured out on the mucous membrane, or are developed only in a fluid. Again, it is very possible that once introduced from without, the conditions necessary for their development may be dependent on some kinds of ingesta, a view which derives support from the facts observed in the case before us, namely, that they were always increased by farinaceous kinds of food. On all these points, however, we are as yet ignorant, and our efforts at cure hitherto have not so much been directed to cutting off the sources of growth, as to destroying it after it has proceeded to a certain extent. With this view it has been imagined that the sulphite of soda would destroy them, by causing, on its union with the gastric juice, the extrication of sulphurous acid, which is so destructive to vegetable life. This remedy has consequently been given, and, it is said, with success; but in the present case it was of no benefit. Subsequently, a variety of medicines were given, several of which succeeded in checking the vomiting for a time. Indeed, it was remarked that the mere circumstance of changing the medicine was sufficient to stop the vomiting for several days, when it returned and continued as before. Of all the numerous remedies tried, the *tr. ferri*

muriatis seems to have done most good.—*Clinical Lectures in Monthly Journal of Medical Science*, February, 1853.

14. *Pathology of Rheumatism and Gout.* By Professor J. H. BENNETT.—The present theory with regard to these affections is, that they are both connected with an increase of lithic acid in the blood. In rheumatism, this is dependent on excess of the secondary, and in gout, on excess of the primary, digestion. In rheumatism, however, there is considerable excretion of lactic acid by the skin (Todd), whilst in gout there is an excess of soda, which, uniting with the lithic acid, produces a compound of lithate of soda, that may be detected as such in the blood (Garrod), while sometimes it exudes into the cellular tissue of the skin, constituting tophaceous deposits. In both diseases, there is an undue balance between the excess of lithic acid and the power of excretion—in rheumatism by the skin, and in gout by the kidney. This pathology serves to explain the similitudes and differences existing between the two affections. In both there is a certain constitutional state, dependent on deranged digestion, during which exciting causes occasion local effects. These exciting causes in rheumatism are bad diet, hard work, exposure to cold and wet, and its subjects generally are the poor and labouring population. In gout, the causes are good diet, indolence, repletion, or indigestion, and its subjects are for the most part the rich and sedentary. The local manifestations in both are acute wandering pains, with pain and swelling—in rheumatism of the large, and in gout of the small joints, constituting the acute attack in the one, and the so-called regular attack in the other. These are combined with a tendency to various complications of the internal viscera, which are more or less dangerous to life.

The general indications of treatment are, in both diseases (1), so to regulate the nutritive functions as to insure a due balance between the amount of matters entering the blood as the result of digestion, primary or secondary, and the amount of matters discharged from the economy by the excretory organs. (2) To conduct the acute attack to a favourable termination, carefully watching the internal viscera, and being prepared to act with vigour should these become affected. Hence the treatment of these diseases resolves itself into what may be called curative and preventive—the first having reference to the acute attack, the second to the means most likely to hinder its return; the one must be carried out by remedies which act upon the blood and excretory organs, the other by the management of diet and exercise.—*Monthly Journ. Med. Sci.* Dec. 1852.

15. *Treatment of Acute Rheumatism by Nitrate of Potash.* By Prof. J. H. BENNETT.—Although the general pathology above mentioned [see preceding article], which considers rheumatism as a blood-disease, may be considered on the whole as correct, we are not yet enabled to explain by it the symptoms of an acute attack of the disease, where, in addition to the constitutional disorder, we have local pain, occasional heat, redness and swelling, with febrile symptoms. Most practical men have attributed these phenomena to a superinduced inflammation, although it has not been shown that exudation occurs, or that it is followed by the usual results of that condition. Besides, its erratic character is opposed to what we know of the process of true inflammation, and calling it an unhealthy inflammation in no way clears up the mystery. The real pathology of acute rheumatism, therefore, has yet to be determined, and, as a preliminary step, a careful histological examination of the affected tissues is absolutely necessary. So far as I am aware, this has never yet been attempted, if we except some observations by Hæsse on the structure of the bones in rheumatism (see the *Monthly Journal* for June, 1847).

Our treatment of this disease, therefore, is purely empirical, sometimes directed against the pain, at others, against the supposed inflammation; now attempting to combat the pathological condition of the blood, then striving to remedy its effects by acting on the excretions; and not unfrequently giving specifics, in the hope that any change in the constitution, however produced, may be beneficial. In no disorder, probably, has such a crowd of opposite remedies and plans of treatment been extolled, and yet none of them can be

depended on, so that it has been imagined that six weeks' rest is the most useful prescription (Warren). The latest author on rheumatism endeavours to explain this by observing, that this need not be wondered at by "those who consider the true nature of the disorder, and the variety of circumstances under which the physician may be called upon to minister to his patient's relief. The bleeding, which in the young, plethoric, and robust, may be necessary to allay excessive vascular action and cause free secretion, may in the weakly induce irritability of the heart, and a consequent attack of cardiac inflammation. The opium, which in one person may prove of the greatest service in promoting free perspiration, and in allaying the general irritability of the system, may in another check the biliary and other secretions, and thus prevent the elimination of the rheumatic poison. The continued use of calomel, and the constant purging, which may be beneficial to one patient by removing large quantities of unhealthy secretions, may unnecessarily exhaust the strength of another, and tend very greatly to impede recovery. And so in regard to every remedy which has been proposed. What is useful at one time proves useless, or positively injurious, at another; and the conclusion is forced upon us, that what is wanted 'is far less the discovery of untried methods of treating disease, than of discriminative canons for the proper use of those we possess;—far less the discovery of any new medicines, than the adaptation of our present remedies to the exigencies of each case.'" (Fuller on *Rheumatism*, p. 73.) These judicious observations may serve to explain the cause of our failure; but until we obtain more exact information regarding the special pathology of rheumatism, it is in vain to hope for a rational treatment.

For my own part, I generally treat rheumatism on what is called "general principles;" these are, to alleviate severe pain by anodynes, diminish excessive vascular action by moderate bleeding and saline antiphlogistics, and encourage every attempt at critical discharges by diaphoretics, diuretics, purgatives, etc. Occasionally, I have tried the effects of special remedies in this disease, and watched a series of cases, all of which were treated in the same manner. Thus I have tried aconite, and believe that alone it is of little service; colchicum, also, I have given frequently, and am of opinion that in pure rheumatism it is of no advantage, although in gout it is invaluable. This session (1851-2) you have witnessed another trial of this kind with the nitrate of potash, a remedy formerly recommended by Dr. Brocklesby, and which has been given with good effect by M. Gendrin, in the wards of La Pitié, in Paris, as recorded by Dr. Henry Bennett (*Lancet*, 1844, vol. i. p. 374). It has more lately been pressed on our attention by Dr. Basham (*Medico-Chir. Trans.* vol. xxxii.), who tells us that from one to three ounces of the salt, if freely diluted in water, may be taken by the patient in the course of twenty-four hours, without any injurious results, but with the effect of relieving in a marked manner the swelling, heat, and pain in the joints.—*Monthly Journ. of Med. Sci.* Dec. 1852.

16. *Treatment of Spasmodic Diseases.*—Dr. ALEXANDER WOOD, in an interesting paper (*Monthly Journal of Medical Science*, February, 1853), points out the irrational and contradictory treatment usually pursued in spasmodic diseases. In the severer convulsive diseases, as tetanus and hydrophobia, he remarks, wine, brandy, and opium—stimulants—are conjoined with the cold affusion or cold bath—sedatives. Opium in small doses, which as a stimulant and soothing remedy might prove useful, is counteracted by tobacco, a sedative, or by irritating and depressing purgatives. We are told to administer the most violent purgatives in these diseases, and are encouraged to persevere in their employment to an enormous extent, by the hope of eventually obtaining from the bowels an assortment of strange and heterogeneous matters.

"In these diseases," he adds, "where the violent muscular effort demands a large supply of blood, and where the want of that supply increases the irritability of the system, we are taught to bleed, beginning with from thirty to forty ounces, and repeating it if need be. What end can bloodletting possibly subserve, unless in those exceptional cases, to be afterwards specially considered, where urea

exists in that fluid? There is no morbid matter in the circulating fluid which bleeding can remove! There is no inflammation which it can subdue! On the contrary, that terrible muscular action, like a consuming fire, is draining away the nutriment of the system even faster than your relentless lancet, and when the supply is exhausted the flickering taper will expire.

"Or, in the case of an unhappy infant, ill-thriven, ill-fed, who has imbibed irritability of constitution with the milk of a gay, luxurious, self-indulgent, and nervous mother, and who has had that irritability confirmed by a long course of ill-regulated management; why will you, when the irritation of a tooth has proved the cause of convulsions, not rest satisfied with removing the immediate pressure, and then set about improving the general system, in which the real danger lies, but apply cold to a head where no symptoms of congestion or inflammation is to be found, harrow the gums with daily scarifications, and administer a powerful purgative, glorying in the expulsion of depraved secretions, which only indicate the impaired state of nutrition, and the necessity for a very opposite kind of treatment?"

Dr. Wood very earnestly solicits attention to the following therapeutical considerations, based on the physiology and pathology of spasmodic affections:—

1. The importance of great attention to a proper supply of nutriment and of air, in all circumstances where either hereditary tendency or other circumstances are likely to develop convulsive diseases. Trismus nascentium is epidemic in the West Indies, from the absurd way in which infants are there treated. The same disease was banished from the Dublin Lying-in Hospital by proper attention to ventilation and cleanliness.

Laryngismus stridulus is never so satisfactorily treated as by change of air. The mortality of tetanus in our naval stations in the West Indies has been very much reduced, mainly, according to Dr. Dickson, by improved hygiene.—(*Med.-Chir. Trans.* vol. vii. p. 765.)

2. Let us divest our minds of the idea that it is necessary to treat the fit in any of these diseases. It is only a part of a train of morbid phenomena, and though the part most striking to the bystander, ought not to make the same impression on the intelligent physician. No one now thinks of treating the fit, either in epilepsy or in chorea, and why should we think it necessary in tetanus or hydrophobia?

3. Is it not worthy of consideration whether the obstinate constipation in tetanus and lead poisoning may not be a spasm of the muscular coat of the intestines analogous to that of the voluntary muscles, and, like it, not to be overcome by brute force (*i. e.*, purgatives)? Certain it is, that in lead colic the finger, introduced into the rectum, is held by the sphincter as by a vice, and pressed tightly upon by the gut, and that this pressure returns at each paroxysm.¹ Certain it is also, that the retraction and hardness of the abdomen, associated by Merat² with that internal constriction, is found also to exist in tetanus, though I am not aware that any one has ever explored the internal state of the bowel in that disease. It may be necessary to remove the morbid secretions in the bowels, though every intelligent physician will have to balance the amount of irritation produced by their presence with that caused by the drastic purgatives necessary for their removal. The spasm which retains them is the effect of the disease. It is to treat symptoms, to attack it alone; and when we succeed in overcoming the disease, the bowels will spontaneously relieve themselves. Tralles³ found opium succeed in a case of ileus where purgatives had failed. I have seen the same. Lentilius⁴ has confirmed this; and in a severe form of colic, Bonn⁵ became convinced by experience that it was the most powerful remedy.

4. The most efficient and the most frequent agents in the production of these diseases are sedatives. Bloodletting is a most powerful sedative, and if carried to any extent in a healthy person produces convulsions. Is bloodletting, then,

¹ Tanquerel.—*Traité des Maladies de Plomb.* etc. p. 210.

² *Traité de la Colique Méallique.*

³ *Opil. Usus et Abusus*, sect. 2. p. 260.

⁴ *Eph. Mat. Cur.* dec. 3, ann. 1, p. 131.

⁵ *De Officio Medici.*

a suitable remedy in these affections? In chorea, it was formerly practised, and is now abandoned, from the injurious effects which it produced. In delirium tremens and hysteria, its use has also been given up. In epilepsy, it is rarely used by intelligent physicians, except to meet the requirements of secondary affections; and if we still retain its employment in the more severe convulsive diseases, it is probably only because their rapid course and frequently fatal issue makes it very difficult for us to ascertain the effect of any treatment.

5. In one class of convulsive diseases bloodletting seems, in the present state of our knowledge, to be indispensable. Where urea exists in the blood and produces convulsions, it must either be expelled or counteracted. We scarcely know how to accomplish the latter indication, and therefore are driven back on the former: but, even while seeking by bloodletting to get rid of the urea which is mixed with that fluid, we must never forget that it "both acts on the nervous system as a narcotic poison and impoverishes the blood, inducing degeneration of the tissues;"¹ and that, therefore, while we take blood to remove the poison, we must do our utmost to replace the nutriment which we are unavoidably compelled to abstract along with it.

6. Our views on this subject would become more definite and precise, could we avoid imagining that spasm implies augmented strength. It is not easy for us, when seeing the violent agitation of the system which prevails, to divest our minds of the idea of great power being developed, but the same remarks apply to mania, in which disease, thanks to the exertions of Dr. W. A. F. Browne,² general depletion, tartar emetic, brisk cathartics, and ice to the shaved scalp, are no longer in such vogue as they once were.

If such are the objections to the routine practice, what course ought to be pursued? It is easier to point out error than to demonstrate truth. But I venture to suggest—

7. That sedatives should be cautiously used. Chloroform and cold affusion have each proved fatal in delirium tremens.

8. That every effort should be made to put into the system as much nourishment as it is capable of beneficially employing.

9. But, if there is any faith to be placed in antipathic treatment, it is to stimulants we must most trust.

10. It is worth observing, that most of those chemical agents which produce convulsions, acting, as has been already said, in large doses as sedatives, do in small doses act as stimulants.

11. We find also, that where the minor spasms, as cramp, have been excited by irritation of the peripheral distribution of one class of nerves, as those of the mucous lining of the bowels, they are often relieved by irritation of the peripheral distribution of another class of nerves, as by friction on the skin.

12. The cerebral functions, more especially volition and sensation, being much in abeyance, any stimuli, whether mental or physical, by which they can be excited, should be freely given. It was on this principle that Boerhaave prevented the recurrence of epileptic attacks, by directing a red-hot iron to be applied to any who might be seized.³

13. The extreme sensitiveness to all irritations which exists whenever the spinal predominates over the cerebral system, suggests the propriety of enforcing the most absolute quiet, and preventing the access of all bodily and mental stimuli. In tetanus and hydrophobia, the creaking of a shoe, the slamming of a door, the sight or even the thought of water, or the gentlest zephyr playing on the surface of the body, excites a fit. Hence Armstrong tells us, that in tetanus those patients recover best who get little active treatment, but are nursed, as it were, through the fit.⁴

14. And if sources of irritation ought to be prevented, those actually existing ought to be removed, but never by irritants which are more powerful than themselves. This surely gives sufficient latitude to the most devoted admirer of

¹ Williams's Principles of Medicine, p. 150.

² Monthly Journal, 1841, p. 75.

³ Falconer on the Influence of the Passions, p. 100.

⁴ Lectures, edited by T. G. Thomson, p. 572.

the gum lancet, the bolus, or the bag and pipe, while it suggests to him a little caution in these somewhat coarse though most popular remedies.

15. And lastly, if I have not succeeded in pointing out any one remedy which stimulates the cerebral without exciting the spinal system, it is because few, if any, such are known. It is a subject of investigation well worth attention. And if no particular plan of treatment has been announced, which can be unhesitatingly recommended, I am perfectly satisfied if I have created any doubt as to the course which at present is too unhesitatingly followed. I think, at least, something has been done to show how much more constitutional these affections are than is usually supposed, and thus to open up new plans for prevention, if not for cure. And if in acute mania, in puerperal insanity, in delirium tremens, in chorea, in laryngismus, and may I add in epilepsy also, empiricism or the influence of authority has induced us to abandon antiphlogistic treatment, and to adopt stimulant and soothing remedies, I do not despair of a sounder pathology soon prevailing in regard to this whole class of affections, and of the discovery yet being made, that they are much more amenable to treatment than has hitherto been supposed.

17. *Treatment of Diabetes*.—M. BOUCHARDAT, in a memoir published in the 16th vol. of the *Mémoires of the French Academy*, declares that by the following plan he can cure the majority of cases of diabetes—the test of cure being not only present removal of the sugar from the urine, but the ability of the patient to employ feculent aliments without its reproduction. He, however, requires the intelligent co-operation of his patient, and, above all, the frequent testing of the urine, by the patient himself,¹ as a means of ascertaining progress and guarding against relapse. The means chiefly to be relied upon are those of a hygienic character; and, at all events, the power of these should be exclusively ascertained at first, before resorting to any medicinal agents.

1. *Diet*.—As long as the urine exhibits sugar, all feculent and saccharine aliments must be entirely excluded; but the patient need not be confined to what is called an exclusively flesh diet, although this, when not repugnant to him, is the best. Every description of meat, dressed with the usual sauces and seasonings (to the exclusion of flour, however), may be employed; and for those who can get over the prejudice against it, the flesh of *carnivorous* animals, M. Bouchardat says, is best. By proper management (and what cannot a French cook do?) that of the cat or fox becomes a highly relishing viand. Several poor patients, who otherwise would have been unable to procure a flesh diet, have resorted to this means with advantage. Fish, in all its numerous varieties, forms a valuable resource for both rich and poor, and may be eaten with abundance of oil and a moderate quantity of vinegar. Eggs, again, so susceptible of varied modes of preparation, are excellent; and although milk is forbidden, good fresh cream and all kinds of cheese are allowed. Except in extreme cases, green vegetables and salads, although they contain some sugar, starch, or gum, may be taken in moderate quantities; but abundance of oil, or the yolk of eggs, should be conjoined. For such patients as cannot well overcome their liking for bread and other feculents, M. Bouchardat has, during the last ten years, had a bread prepared of flour containing 70 per cent. of gluten.

As the prohibited feculent and saccharine bodies belong to the respiratory group of alimentary substances, we have to choose others from the same group; and those best calculated to supply their places are fatty bodies and alcoholic drinks. Among the latter, Bordeaux wine occupies a prominent place, as much as from one to two litres (from two to four pints) being admissible *per diem*, which, at 10 per cent. of alcohol, would supply about 150 grammes (2½ oz.) of this substance in the 24 hours. Fatty bodies must not be given too exclusively, lest they excite disgust, but mingled with other aliments, from 150 to 200 grammes being required, in addition to the alcohol. Beer is

¹ For indicating the presence of sugar in the urine, he employs lime-water, and believes it to be a safer test than the copper solution; for the quantitative determination he employs exclusively Biot's polarizing apparatus.

objectionable, from containing dextrose. Coffee, drunk without milk or sugar, and to which a little rum, cream, or brandy may be added, is a good drink. To relieve thirst, Seltzer, Spa, Vichy, or soda water may be taken; but acid drinks, so keenly desired by the patients, are very objectionable. The patient should always eat and drink in moderate quantities, slowly masticating his food. This practice tends to the relief of the attendant dyspepsia, and to assist the distended stomach to return to its normal dimensions. A flannel bandage applied around the epigastrium contributes to the same end.

2. *Clothing*.—As chills operate very injuriously on these patients, warm flannel clothing forms a valuable protective agent, and beneficially excites the languishing functions of the skin. Indeed, some medicinal agents are of no avail unless aided by complete flannel clothing, which maintains diaphoresis. General frictions are very useful, and a moist warmth of the feet should be maintained.

3. *Exercise*.—To recommend this indiscriminately would be injudicious, for many patients are too feeble to undertake it. But when their strength has become somewhat recruited by regimen, walking, gymnastics, agricultural labour, &c., much expedite the cure, and are found, as recovery is approaching, to enable the feculent aliments to become utilized by the system.

4. *Pharmaceutical Agents*.—M. Bouchardat entertains a high opinion of the utility of carbonate of ammonia (from 5 to 15 grammes—77 to 230 grains—in the 24 hours), providing flannel clothing be worn. Other *alkalies* suffice for slighter cases, when the urine contains uric acid as well as glucose. Employed contemporaneously with out-of-door exercise, they seem to exert great influence in preventing the reappearance of sugar in the urine, when feculent aliments are resumed. *Opiates*, if given alone, are mere palliatives; but when conjoined with other remedies, and in moderate doses, so as to act on the skin, they are very valuable. M. Bouchardat sometimes prescribes Dover's powder, but prefers the old *theriaca* before all other preparations, without defending the absurd complexity of its composition.

In severe cases of glucosuria, then, diet, exercise, and flannel clothing constitute the basis of treatment, carbonate of ammonia and opiates best aiding their action. Other remedies have their occasional uses, such as iron, tonics, chloride of sodium, and antiscorbutic plants. M. Bouchardat often employs emetics at the commencement, and endeavours to modify the disturbed functions of the liver by aperients, of which ox-gall with rhubarb are the best.

Circumstances influencing the effects of Treatment.—Foremost among the *favourable* indications in a case is the *rapid return of the urine to a normal state*, which may take place in from 24 to 48 hours after the feculents have been excluded. The *recent date of the affection* is another highly favourable circumstance, and because it is so, M. Bouchardat urges testing the urine whenever the slightest suspicion can be held, and for the detection of relapses, which are frequent and insidious. Other favourable circumstances are the retention of considerable *embonpoint*, the easy circumstances of the patient, and his being in possession of great perseverance.

The *unfavourable* circumstances are the reverse of the above; but negligence is still worse than poverty, as the poor man has some resources. The treatment of the case is usually ill managed in *hospitals*, owing to the vitiated air, the absence of exercise, the sameness of diet, and the insufficiency of surveillance. The existence of a great *appetite* is a common and not unfavourable circumstance, requiring only moderation in its gratification, at meals not too far separated. *Want of appetite* is a far more unfavourable sign, which should be actively combated. M. Bouchardat has found small doses of rhubarb, and exercise in the open air, of advantage. *Obstinate constipation*, resisting the most varied purgatives, is a bad complication, indicating disease of long duration, which has produced important modifications in the condition of the alimentary canal. Fatty substances, combined with matters which leave residue, as spinach and gluten-bread with bran, are here indicated. *Cold and damp air* is unfavourable to diabetic patients; but M. Bouchardat has had patients from Algeria, and has not derived advantage from sending others to Italy. M. Bouchardat agrees

with Dr. Prout, in considering the appearance of *albumen* in the urine, which is often met with as an unfavourable occurrence. The prognosis of saccharine albuminuria is not so serious as is that of simple chronic albuminuria. The frequency of the occurrence of *phthisis* in cases of glucosuria is familiarly known. In all the autopsies the author has made, when the patient has not been cut off by an intercurrent affection, tubercles have been found in the lungs; and he feels convinced that many cases of *phthisis* have had their origin in a glucosuria that has been overlooked, and which might have easily been removed. In severe and old cases of glucosuria, *vision* is always found more or less enfeebled; but in most cases, when not of old date, as the condition of the patient has improved under appropriate regimen, this amaurosis has subsided. When, indeed, this is not the case, the prognosis of the glucosuria is serious; and it will often be found complicated with albuminuria. *Impotence*, more or less decided, is another effect of glucosuria; but in young subjects the generative functions resume their power when the original disease is rationally treated. Glucosuria may occur at any age, from infancy to senility; M. Bouchardat having met with most cases between forty and fifty. He has met with none between eighteen and twenty-five. Old age does not constitute an obstacle to cure; but so difficult is it to watch over children, that the author is not aware of a sustained cure prior to fifteen years of age. He has met with more male than female patients.—*British and Foreign Medico-Chirurgical Review*, January, 1853.

18. *Laws which influence the secretion of Sugar in Diabetes.* By Dr. MORITZ TRAUBE.—It has hitherto been thought sufficient to determine the quantity of sugar contained in the urine, either by analyzing that passed in the morning, or by extracting the saccharine matter from the entire amount evacuated during the twenty-four hours. There are, however, various circumstances in the diurnal life of the patient which may exercise a marked influence on this pathological secretion, the effects of which cannot be observed by following either of the above plans. Led by these considerations, Dr. Moritz Traube has in his researches pursued a method different from that adopted by other observers, and has thus obtained results which deserve to be briefly explained.

The patient on whom his observations were made was a young man of 28, who had for a short time laboured under diabetes. Of the ordinary symptoms of the disease, the best marked were the excretion of highly saccharine urine, extreme thirst, great increase of appetite, irregularity of the bowels, and disturbed sleep. Emaciation, however, had made but little progress, nor was there much perceptible dryness of skin. His regimen was so directed as to exclude as much as possible all amylaceous food. The urine was analyzed twenty-five times from the 1st to the 7th of January, and the following are the principal conclusions deduced by the author from his experiments: 1. The proportion of sugar contained in the urine was very different, according to the period of the day at which it was passed, varying from 225 grains to 26 grains in 100 cubic centimetres (39.3708 cubic inches, equal to 22 fluidounces and 8 drachms nearly). This fact proves how little can be inferred of the intensity of a case of diabetes from analyses conducted in the ordinary mode. 2. The quantity of sugar secreted was liable to remarkable oscillations—the maximum was 88 grains in the hour, the minimum rather more than 24. 3. The amount of sugar was very sensibly augmented for a few hours after a hearty meal. 4. If the patient remained eleven hours without taking nourishment, it decreased so rapidly that during the last seven hours of this period a very insignificant quantity only could be found—less than 3 grains, for example, instead of upwards of a drachm, in the hour. 5. Usually, no sugar was excreted during the latter hours of the night; that is to say, at as long an interval as possible after a meal. 6. Almost all the sugar was derived from the meals, and disappeared after digestion was completed.

Five months subsequently, the patient, very much emaciated, and with greatly increased suffering, placed himself under the treatment by the Carlsbad water, and adopted a stricter regimen. The effect of this double plan was to produce a considerable improvement; his thirst and appetite were again re-

strained within nearly natural limits, and the excretion of urine was much diminished. Except that sugar was still proved to be present, the patient no longer presented any of the symptoms of diabetes. The analyses, repeated from the 26th June to 16th July, furnished the following results: 1. The proportion of sugar varied from 2 drachms to 17 grains in 100 cubic centimetres (22 fluidounces and 6 drachms, nearly) of urine. 2. The quantity of sugar excreted was greater than in the preceding experiments—the minimum being 24½ grains, the maximum rather more than three drachms. 3. It increased in proportion as the urine was examined nearer to a meal, and diminished according to the length of time which had elapsed after one; but no urine was now found, as formerly, free from sugar. 4. When a long time had elapsed without the patient having taken nourishment, the oscillations already described were no longer observed; the quantity remained stationary at about 45 grains. 5. There are two stages in diabetes: during the first, all the sugar contained in the urine is furnished directly by the ingesta; during the second, the sugar is not derived solely from the food, but is the result of a peculiar secretion of the liver. 6. In order to estimate the intensity of a diabetes, the urine must be analyzed in the morning, before a meal has been taken: if it is free from sugar, the disease is in the first stage; if it contains saccharine matter, the diabetes is in the second stage, and is advanced in proportion to the quantity of sugar voided in each hour. 7. As to treatment, the alkaline carbonates, administered in the form of Carlsbad water, while they modified certain symptoms, did not exercise any influence on the intensity of the disease.—*Dublin Quarterly Journ. Med. Sci.* Nov. 1852, from *Archiv. für Heilkunde, von Virchow. Nouvelle Encyclopédie des Sciences Médicales*, April, 1852.

19. *Character of the Pleuro-Pneumonia which has recently prevailed in London.* Dr. JAMES R. BENNETT relates (*Association Medical Journal*, Jan. 14, 1853), four cases of empyema opening through the bronchi, and gives some interesting information relative to the pleuro-pneumonia which has prevailed in London during the past eighteen months:—

The attention, he remarks, of most observers, must have been more or less arrested by the modifications which our treatment of local inflammation, and especially of pneumonia, has for some years been undergoing, especially in reference to the employment of bleeding. In this important remedy, the faith of many has been utterly shaken; nor has it fared better with antimony and mercury, in which many have been wont to place the most unlimited confidence. The dicta of Louis, in reference to the inefficacy of bleeding, except in the very earliest period of pneumonia, have not indeed been received in this country with unquestioning consent; but neither has the non-correspondence of his experience with that of British practitioners been satisfactorily explained. It cannot, I think, be doubted that, apart from varieties in what is called the epidemic constitution, there are important differences in the same disease, in so far as regards the constitutional symptoms by which it is manifested, dependent, perhaps, on climate, national constitutions, habits, modes of life, &c., as well as differences dependent on varieties of individual constitutions. All this, it may be said, is known and admitted; but is it sufficiently considered in practice? Is it sufficiently borne in mind, in estimating the statements and experience of observers situated in very different circumstances from our own? I am satisfied that much of the contrariety existing between French and British practitioners in reference to some of the more ordinary diseases, and the more common points of practice, is explicable by such considerations and by such alone. Thus, when going round the wards of the Hôtel Dieu last summer, with M. Louis, I observed several cases of erysipelas, and asked whether he found it necessary to employ stimuli to any extent in their treatment. I was struck by his answer, that he did not find it necessary to employ any treatment beyond rest and the most simple dietetic rules; for that in his experience idiopathic erysipelas was a very trifling disease, and never fatal, unless associated with some visceral disease or cachectic habit. Now this certainly is not the experience of our British hospitals; at all events, not of the London hospitals. Nor is it the experience of private practitioners in this country. It is

true that the majority of cases of idiopathic erysipelas do well, and that the disease manifests a strong natural tendency to cure, after running a specific course. But with us it is by no means a trifling ailment—it is essentially of an adynamic type, and requires a tonic treatment; more decided and vigorous, it may be, in some cases than in others. But whilst it is manifestly necessary to exercise much caution ere we adopt or reject the results of the experience of other observers, whether of our own or any other country, scarcely less caution is requisite either in following or discarding our own so-called experience. It appears to me that we are by no means warranted in inferring that, because bleeding and antimony are not found to answer so well in the treatment of pneumonia as we had been taught to believe, or as we formerly found them to do, therefore our former experience, or that of our predecessors, was fallacious. These remedies will, I believe, be found fully to warrant the confidence that was placed in them, when they are judiciously employed in the treatment of the same type of disease. We must, however, be sure that the same phenomena are present which former observers have pointed out as the indications for bloodletting. We are not justified in questioning the correctness of their therapeutic precepts, unless we have applied them and found them wanting, not merely in what we believe to be the same disease, pathologically speaking, but in the same disease attended by those phenomena which they depicted in no obscure or doubtful manner. Most unnecessary and unmerited discredit is thrown on our science, and especially on our art, therapeutics, by thus questioning or discarding the results of former experience, merely because they are not available for our present necessities. The arch enemy, the spirit of quackery, is ever ready to turn to good account, for his own purposes, such error. And still greater is the advantage given him when, from overweening confidence in established remedies, or inability to discover “the signs of the times” in reference to disease, there are found those who obstinately persist in the attempt to make disease accord with their treatment, rather than change their treatment with the disease. Doubtless much of what is called experience is fallacious; and we ought not, from unworthy fears of bringing discredit on our art, to shrink from abandoning error when once proved to be error. There has been no little craft displayed by the globulists in the selection of those acute diseases which they have made their stalking-horse; and nothing is more easy than the attempt to turn to the discredit of legitimate medicine, the difference of treatment pursued in diseases called by the same name.

True sthenic pneumonia of the croupous variety, *i. e.*, inflammation attacking the air-cells, and characterized by the effusion of plastic matter, by which these are obliterated, and which leads to solidification of the lung, which, on being cut into, presents the characteristic granular surface, arising from the filling of the cells with solid lymph, has become a comparatively rare disease of late. The ordinary received descriptions of this disease are, however, true to nature; and there would not, perhaps, on close examination, be found to be much difference of opinion among experienced judicious practitioners, as to the treatment of such disease. For my own part, in proportion as I found a given case of such disease to correspond in its constitutional phenomena with those which the writers of the time of Cullen, and even much subsequently, described as indicating the necessity for bloodletting, I should with them consider it as the “remedium magnum,” and employ it with as much confidence as they did. The pleuritis which accompanies this form of pneumonia is, for the most part, attended simply by the effusion of plastic matter, adhering to the two sides of the serous membrane, and unassociated with much fluid. And the pleuritis itself is quite a subsidiary and secondary disease, the mere result of the extension of the inflammation from its contiguous seat in the lung itself. The pleuropneumonia thus constituted, partakes of the same general character as the simple pneumonia.

In all these, as well as in other important respects, the inflammatory disease which has of late prevailed, and of which I have detailed several examples, differs considerably. It differs both in the character of the attendant constitutional symptoms, of the structural changes, and the treatment demanded. It is not, however, what has been generally understood as typhoid pneumonia.

Certainly it is not always, nor generally, associated with either typhus or typhoid fever. It is, for the most part, unaccompanied either with any specific form of eruption, or evidence of contagion. In many instances the pleuritis has been the earliest of the two affections, in the order of occurrence, and in most, the more prominent affection. In some cases the disease has begun with catarrhal symptoms, subsequently passing into pneumonia or broncho-pneumonia, concurrent with the supervention of pleurisy. The pain has been frequently great, and a very prominent symptom: and effusion has taken place rapidly and to a great extent, assuming, I think, very early, a purulent character. Cough has not been either a troublesome or prominent symptom. The sputum at some period, sometimes earlier and sometimes later, has almost always indicated that the substance of the lung and the air-cells were involved in the inflammatory action. It has not, indeed, presented the ordinary characters of the brick-dust or rusty sputum of the sthenic pneumonia, expectorated in small masses of extreme viscosity; but it has always been more or less tenacious and glairy, sometimes streaked with blood, and at other times presenting the appearance of prune-juice, or of a dirty greenish-yellow colour, and copious in quantity. It has varied also in the same case from day to day—at one time being free from sanguineous impregnation, having the appearance of simple viscid bronchial secretion, and the next day, perhaps, being more of a bistre colour. The dyspnoea has not usually been urgent, nor the respiration at all laboured, but for the most part of increased frequency. In most cases the skin and tongue have been moist, the former clammy, and the latter loaded with a dirty creamy fur—sometimes, however, dry and brown. The pulse, generally rapid, has usually been soft, sometimes very feeble—the urine, sometimes high-coloured and scanty, in other cases has been copious and of a pale straw colour. In short, the constitutional symptoms have not been those indicative of excited action of the vascular system; so far from it, that, judging by the skin and pulse alone, it might frequently be inferred that little or no fever was present. I have seen, in some instances, even where the greater portion of one lung was manifestly involved in the inflammatory action, but little if any appreciable excitement of pulse or difficulty of respiration.

The physical signs have shown that the inflammatory action has spread rapidly over a large extent of surface, although generally confined to one side. It is also deserving of special attention, that the upper lobes are much more frequently implicated than is observed in the ordinary sthenic pneumonia. The amount of solidification of the lung that ultimately results, is not, however, always correspondingly great, or, at all events, is not very complete; nor is it so permanent; that is, the lung sooner returns to a condition in which it is more or less permeable to air. It has appeared to me to be checked in a measure by the pleuritic effusion as this becomes copious; the ordinary result of copious pleuritic effusions ensuing—compression rather than enlargement and solidification from effusion of solid matter in the substance of the lung. Where the amount of pleural effusion has been less, and the pneumonitis has pursued its own course, uninfluenced by external pressure, suppurative infiltration of the lung has often supervened, without much complete preceding solidification. This state of lung, as was manifest in the case of Maroney, shows a tendency to gangrenous destruction; and one of the chief points of interest in the *post-mortem* history of Maroney's case, is the small amount of solidification that was found, notwithstanding the extent of lung involved. It was only in the immediate vicinity of the gangrenous cavities that the lung was impervious to air and non-crepitant. Indeed, it seemed pretty clear that the case proved fatal, not so much from the extent of lung originally involved in the inflammatory action, as from its character and the consequent gangrene. The suppurative tendency is still more marked in the pleural cavity. This tendency to suppuration, breaking down, and gangrene of the tissues, probably accounts for the particular termination of the cases detailed; at least, in two of them. In the case of the gentleman first detailed, I believe the principal accumulation of pus was interlobar, and that, as the acute stage subsided, the effusion in the general cavity of the pleura was, for the most part, absorbed; whilst a considerable collection still remained pent up between the lobes of the lung and its

root; so that, when, at length, the matter obtained exit, the outlet was very direct, opening immediately, or nearly so, into the larger bronchial trunks. Thus, the discharge was sudden, rapid, effectual, and uninterrupted till the whole was expectorated. The sides of the cavity would thus be brought more readily into apposition, and its obliteration effected. The steady, rapid progress towards cure of this case, after the discharge of the matter, independent of the physical indications, shows, I think, how little true solidification of the lung there had been.

The absence of the signs of pneumothorax (except in the case of Connor, where the indications of a circumscribed pneumothorax were well marked) is a point of great interest in all the cases detailed. This circumstance may perhaps excite doubts in the minds of some, whether there were really any communication with the bronchi. But I know not in what other way we are to explain the sudden removal of the pleuritic effusion, and the circumstances attending that removal. In the first case detailed, there cannot be the least doubt that a very large accumulation of fluid obtained sudden exit by the bronchi, so as for a time to place the life of the patient in extreme jeopardy. In the last case, the sudden discharge of a small quantity of fetid, gangrenous matter, succeeded by more copious purulent expectoration, was immediately followed by marked changes in the physical signs, which indicated the rapid disappearance of an accumulation of fluid in the pleura. Whether, in this and the other cases, the absence of all signs of the presence of air in the pleural cavity is to be ascribed to the existence of extensive adhesions, or to any peculiarities of the communication with the bronchi, I am unable to say.

Such are the more important features of the thoracic inflammation, to which I venture to call the attention of the profession; and they are sufficient, I think, to show that it differs, in many most material respects, from the ordinary form of either pneumonia or pleuritis. Upon what does this difference depend? Not, I think, merely on peculiarities of individual constitutions. I have seen the disease in various constitutions, and in persons moving in very different social spheres. It has no necessary connection with any form of continued fever. Is it connected with erysipelas? I am disposed to think that it is; not that it is generally associated with the external manifestation of erysipelas. The pneumonia that is associated with fever, erysipelas, and cachectic states of system generally, it is well known, is usually of the asthenic type; but I am disposed to regard the pleuro-pneumonia now under discussion as itself a form of erysipelatous disease, and for these, among other reasons: 1st. In its pathological features, it closely resembles erysipelatous inflammation; 2d. It has prevailed contemporaneously with external erysipelas; 3d. An erysipelatous form of cynanche has been very common, and, in many cases, has been an attendant on the thoracic inflammation; sore-throat having been frequently complained of in the beginning, and, as this has subsided, bronchial symptoms have occurred, to which the pneumonia and pleuritis have succeeded. I feel, however, bound to admit that it differs in some material respects from the ordinary forms under which erysipelatous inflammation of internal organs has hitherto been known to us.

In respect to the treatment of this disease, it is manifest that it must differ materially from that of the ordinary forms either of pneumonia or pleuritis. General bleeding is rarely if ever admissible; I have never employed it. Local depletion, to a limited extent, especially in the early stages, is sometimes decidedly useful, especially from the relief it affords to the pain and the congested state of the parts implicated. Counter-irritation may be more early employed than is desirable in the more sthenic forms. Blisters, indeed, I have found of the most marked benefit, and have been in the habit of repeating them frequently. Calomel and antimony, if used at all, must be very cautiously and sparingly employed. Dover's powder, in doses of five grains, with a grain of calomel, three or four times a day, has appeared to me very useful. But I have not given the calomel with the view of affecting the system, so as to induce any of the symptoms of mercurialization. Ammonia has proved the best expectorant; and this I have given usually with the acetate of ammonia, sometimes with the camphor mixture, and at other times with serpentaria or senega.

In almost all cases, I have allowed the patients beef-tea, and very frequently found a certain portion of wine to be necessary. But under any plan of treatment, the affection is attended by great danger, and, in its worst forms, very fatal. So rapid has been the progress in many cases, so great the prostration, even with the most cautious treatment, that I have, in more than one case, been led to doubt whether the patient would not have had a better prospect by entire abstinence from all antiphlogistic treatment, so called, and the use of stimuli alone *ab initio*. Ample and efficient blisters, with wine, beef-tea, and ammonia, are, I believe, the remedies on which most reliance should be placed in the most aggravated and most characteristic examples of the disease. But such remedies must be used cautiously. Many cases will do well with little or no treatment, even though, as ascertained by the physical signs, there be a considerable amount of inflammation; a simple diet, not too antiphlogistic; rest, and an open state of the bowels, with some counter-irritation, being all that are requisite; anything beyond this, like the homoeopathic globules, serving only to amuse the patient, and gain for physic a degree of credit which is not its due.

20. *Angina Pectoris*.—[Dr. O'B. BELLINGHAM communicated to the Surgical Society of Ireland (Jan. 15, 1853) a case of angina pectoris, and offered the following theory in relation to this affection, which is worthy of consideration:] Angina pectoris has been heretofore always described as a distinct disease. The earlier writers upon the subject supposed it to have some mysterious connection with ossification of the coronary arteries; others, that it depended on excessive deposition of fat upon the heart. Modern pathologists having failed not unfrequently to discover either of these morbid changes, and seeing the suddenness with which it supervenes and subsides, refer it to *spasm* of the heart; while others, again, looking more to the character and intensity of the pain, regard it rather as a form of *neuralgia*, and describe it under the name "*Neuralgia of the Heart*."

I do not think sufficient evidence has been adduced to entitle angina pectoris to be regarded as a distinct disease; neither do I think it necessary to call in the aid of spasm or neuralgia, when there are circumstances in its clinical history and pathology which seem to be quite capable of explaining all its phenomena independent of either. Thus, angina, in a well-marked form, is not seen except in cases of organic disease of the heart; and as a general rule, it is not observed even in these, unless something occurs either to disturb the action of the heart, or to hurry the circulation.

The immediate cause of angina pectoris appears to me to be a sudden impediment to the coronary circulation, particularly to the return of the blood by the coronary veins, itself in general the result of a temporarily over-distended state of the chambers of the heart, and an inability in them to empty themselves, whether owing to weakness of the muscular tissue of the parietes of the left ventricle, or to other causes. For instance, if the cavity of the left ventricle is considerably dilated, or its walls are attenuated, or softened, or have undergone fatty degeneration, the contractile power of its muscular tissue will be impaired in proportion; and if the circulation happens to be suddenly hurried, or the heart's action to be suddenly disturbed, the cavity of this ventricle might become so much distended as to be unable to contract upon its contents, which would be immediately followed by distension of the auricle on that side, and if relief is not quickly experienced by distension of the right chambers of the heart.

It is scarcely necessary to say, that in a normal state of the circulation, all the chambers of the heart are never full of blood at the same moment. When the ventricles are filled, the auricles are comparatively unfilled, and *vice versa*. Here, however, we would have a suddenly distended state of the chambers on both sides of the heart at the same moment. From the position of the coronary vessels in the grooves of the heart, they cannot, we know, suffer compression during the alternate movements of the ventricles and auricles; but if the auricle and ventricle upon each side of the heart are distended at the same time, these vessels, but particularly the veins, must suffer compression, by which

their circulation will be impeded; and the great coronary vein, in addition, may be prevented from freely emptying its contents into the right auricle, in consequence of the distended state of this cavity.

We know, likewise, that the normal capacity of the pericardial sac is but little greater than that of the heart in its ordinary state of distension; and that this membrane is composed of tissue which does not *suddenly* yield. The parietes of the heart would, therefore, under the circumstances that I have described, be placed between two compressing forces—an undue amount of blood in the chambers of the organ, and the unyielding pericardium upon the outside. The effect of this compression of the heart's tissue would necessarily be to impede still further the coronary circulation, and to clog still more the movements of the organ, and the condition of the heart would be somewhat analogous to that in which a large amount of fluid was *suddenly* effused into the pericardial sac, from rupture of a vessel or other cause.

The organic lesions of the heart most likely to be attended with angina would, therefore, be a condition of the aortic valves permitting free regurgitation, with a rigid, dilated state of the ascending portion of the arch of the aorta, which permits the blood from the large vessels to regurgitate into it, combined with either—

1. Dilatation of the cavity of the left ventricle; or,
2. Attenuation of the parietes of the left ventricle; or,
3. Softening or fatty degeneration of the muscular tissue of this ventricle.

For instance, when the aortic valves permit free regurgitation, there is at each ventricular diastole a reflux of blood from the aorta into the ventricle at the same time that the current is entering it from the auricle; the left ventricle consequently is unable to empty itself, the state of distension in which it is kept leads to permanent dilatation of its cavity, which tends still further to embarrass the circulation by enfeebling the ventricle, and diminishing its power of expelling its contents.

It has been shown by Hales, that "each square inch of the surface of the interior of the ventricles has a pressure upon it during the systole equal to about four pounds," and, "as the resistance which the heart has to overcome in contracting, is, according to hydrostatic laws, in proportion to the extent of the inner surface of the cavity at the commencement of the systole," if the cavity of the ventricle is dilated, more force will be required to enable the ventricle to expel its contents; and the greater the amount of the dilatation the less able will the ventricle be to overcome the resistance. In such a state of the aortic valves, and in such a condition of the ventricular cavity, if the parietes of the left ventricle are, in addition, attenuated or softened, the ventricle will be still less capable of overcoming the resistance, and a very trifling muscular exertion, or a sudden mental emotion, may lead to over distension of its cavity, followed by distension of the other chambers of the heart. If, at the same time, the arch of the aorta is dilated, and its coats are rigid and inelastic, permitting the blood from the large arteries which come off from the arch to regurgitate into it, the coronary circulation will be necessarily greatly impeded, and a paroxysm of angina will be the result.

Any one of the foregoing morbid conditions of the heart may be present, or two or more of them may be combined, without angina necessarily occurring; indeed, as long as the circulation continues tranquil, and as long as the left ventricle is able to get rid of the blood which enters its cavity, the latter cannot become over-distended. If, however, the heart's action is disturbed by some sudden mental emotion, or other cause; or even without this occurring, if the stomach is loaded with indigestible food, and it and the intestines are distended with flatus, by which the cavity of the chest is encroached upon, and the heart's movements are impeded, a paroxysm of angina may be the result. Hence, in persons who have had previous attacks, it is liable to supervene during sleep, when it may be the result of a frightful dream, disturbing the heart's action; or of considerable distension of the stomach by flatus, impeding the movements of the organ.

Dr. Forbes,¹ in his able article on the subject, has shown that *plethora* is a

¹ Cyclopaedia of Practical Medicine.

very common complication of angina; a state which, if combined with a weak heart, would give a further predisposition to the attack. Thus, "the subjects of angina (Dr. Forbes observes) are mostly of the male sex, above fifty years of age, and a great majority of them belong to that class of persons who are enabled to indulge in full living, without the necessity of undergoing severe bodily labour." Again, "gout is a very frequent disease in persons subject to angina, and obesity is extremely common." "The very existence, too, of angina tends (he adds) to produce plethora if it did not previously exist; a sedentary life and abandonment of all active bodily exertions, are almost inevitable consequences of the disease."

It may, perhaps, be objected that the foregoing explanation of the cause of angina is insufficient to account for the peculiar pain which accompanies a paroxysm. I cannot, however, imagine any state more likely to be attended by intense distress, anxiety, and suffering, with a sensation of impending dissolution, than such as I have described, where the chambers of the heart are immoderately distended, the coronary circulation temporarily obstructed, the heart's movements clogged or impeded, or its muscular tissue compressed.

Angina pectoris, in its most marked form, is almost peculiar to advanced life; thus, of 84 cases recorded by Dr. Forbes, 72 were above fifty years of age, and only 12 under that age. The reason of this is sufficiently obvious; the morbid conditions upon which it depends are, in some measure, limited to advanced life. Again, when a person has been once the subject of angina, subsequent attacks are very likely to ensue if the exciting causes come into operation, because the diseased states on which it depends are irremediable. Lastly, angina is rare in the female compared with the male, because the diseased state of the aorta so frequently associated with it, is very seldom met with in the female; indeed, regurgitant disease of the aortic valves itself, is less frequent in the female than the male.

In conclusion, then, I would say, that angina pectoris ought to be regarded rather as a *symptom* of organic disease of the heart than as a distinct form of disease; in fact, what dyspnoea is to the lungs, angina appears to be to the heart, and it might without impropriety be termed the *dyspnoea of the heart*. Thus both are met with in very variable degrees of intensity; both have sometimes apparently almost purely a spasmodic character, and both are often the result of mechanical causes—in the one case, of some impediment to the free passage of air into or out of the lungs; in the other, of an impediment to the circulation in and through the heart. It would, indeed, in my mind, be almost as absurd to class dyspnoea apart, and describe it as a distinct affection, as it is to make angina a separate disease. As dyspnoea may arise under variable and opposite states of pulmonary disease, so angina may ensue in different forms of cardiac disease. We can, likewise, easily understand, from what precedes, that if the paroxysm of angina is slight, it may pass off spontaneously, or under the influence of stimulants and other appropriate measures, the heart may be enabled to get rid of the blood which distends its cavities; while, if the paroxysm is severe and continued, complete arrest of the coronary circulation may ensue, followed necessarily by cessation of the heart's action and the death of the patient.

The conclusions which I would draw from what precedes, are—

1. That angina pectoris is to be regarded as a symptom of disease of the heart, not as a distinct affection.
2. That it does not occur except where organic disease of the heart, generally of long standing, exists.
3. That its connection with spasm, or neuralgia, is more than doubtful.
4. That its probable cause lies in impediment to the coronary circulation, particularly to the return of the blood by the coronary veins.
5. That the diseased states of the heart in which it is most liable to ensue, are a condition of the aortic valves permitting free regurgitation, with a rigid dilated state of the ascending portion of the arch of the aorta, combined with either dilatation of the cavity, or attenuation, or softening of the parietes of the left ventricle.
6. That, even in these diseased states, angina may not occur unless the

heart's action is suddenly disturbed, or its movements are clogged, or impeded by some mechanical cause.—*Dublin Medical Press*, Feb. 9, 1853.

21. *Affections of the Bronchial Mucous Membrane in Chronic Renal Disease.* By GEO. BRANOWS, M.D., and W. SENHOUSE KIRKES.—In the course of chronic disease of the kidneys, the several great mucous and serous membranes are exceedingly prone to become seriously affected. The affection of the mucous membranes is manifested in various disturbances of their ordinary functions, and occasionally in an inflammatory process of a more or less severe and protracted kind, attended usually with a copious discharge from their surface. The affection of the serous membranes consists chiefly in the accumulation of fluid within their cavity, and occasionally in a low but often fatal inflammatory process. There seems to be sufficient reason for believing that the affections of the mucous and serous membranes, as well as many other secondary complications occurring in the course of chronic renal disease, are due, in great measure, to the disordered state of the blood which the structural affection of the kidneys engenders; for, in nearly all confirmed cases of renal disease, the respiratory and gastro-intestinal mucous membranes present signs of being more or less disordered, and the tendency to effusions and inflammations within the different serous cavities is more or less strikingly manifested. The affection of the respiratory mucous membrane is shown in the almost habitual catarrh to which the victims of renal disease are subject; that of the alimentary mucous membrane in the nausea, vomiting, and disordered bowels so common in this disease; and, when the disorder of either of these great mucous membranes runs on to inflammation, the profuse discharge which in such case often takes place from the affected surface may with reason be considered to result from a natural effort to remove in this way from the system certain injurious materials which, in consequence of the disease of a great excreting organ, have accumulated within the blood. For, although the mere process of discharge may be productive of serious distress and debility, yet it not unfrequently happens that, after such free secretion from a mucous surface, the dropsical effusion which previously existed becomes greatly diminished, and various cerebral and other symptoms, indicative of the circulation of urea in the blood, subside or are removed. And it seems likely enough that the relief in such cases is due to the elimination of some of the morbid materials of the blood along the mucous surface from which the free discharge has taken place. The probable correctness of such an opinion is supported by the almost constant disorder of the gastro-intestinal mucous membrane, manifested in nausea, and vomiting, and profuse diarrhoea, which ensues when, from accident or experiment, any noxious organic materials are received into the blood. Examples of this occur after the absorption of foul gases, or the injection of putrid matters into the bloodvessels of animals, also in puerperal fever with uterine phlebitis, and in the typhoid or extreme hectic condition when gangrene is going on. That the affection of the mucous surfaces in chronic renal disease is dependent on the permanently abiding disorder of the blood, and not on a mere temporary or accidental cause occurring in the course of the disease, is made probable, too, by the very obstinate and protracted nature of the mucous affection, by its liability to relapse independent of ordinary exciting causes, and by its frequent persistence in a chronic form long after the violence of its first attack has been subdued. Chronic catarrh and chronic diarrhoea, with occasional vomiting, are noted among the most common and troublesome of the secondary affections of renal disease, and their obstinacy and intractableness are probably in great measure due to the fact that the cause which gave rise to them is of a permanent and not a transitory kind, and dependent on a general morbid condition of the blood, and not on any circumstance acting only locally and temporarily on the affected membrane.

The constant discharges which in some cases take place from the bronchial and intestinal mucous surfaces, do not usually leave any structural changes discoverable in these membranes after death, but occasionally, there is distinct evidence of ulceration of the intestinal mucous membrane, usually of a dysenteric kind, and affecting the large intestine. It may admit of question whether the dysenteric ulceration in such cases is a mere accidental complica-

tion, independent of the primary disease of the kidneys, or, as seems more probable, results from the direct irritation of an unusual and probably acid secretion continually eliminated from the affected surface.

It is not common for both of the great mucous membranes to be simultaneously affected to any considerable extent in renal disease; for although each of them is usually somewhat disordered, yet, generally speaking, the principal mischief is limited to one, and rarely leaves it to attack the other. Thus, when the brunt of the affection falls upon the bronchial mucous membrane, it is unusual for it to leave this surface and attack that of the alimentary canal; and the same persistence of the affection in the membrane first attacked is observed when the alimentary mucous tract is the main seat of the secondary affection. When either mucous membrane is seriously affected, and free discharge takes place from its surface, it usually happens that the tendency of the disease to kill by dropsy or cerebral disorder is kept in abeyance, though death not unfrequently arrives in consequence of the prolonged distress and exhaustion resulting from the perpetual drain from the affected mucous surface and the attendant disorder of its own proper function as a respiratory or alimentary organ. It may be observed, too, that affections of the mucous membranes, especially of the respiratory tract, are not limited to any particular stage of the disease, being as common in a first attack of febrile dropsy, or dropsy after scarlet fever, as when the disease is thoroughly confirmed, or advanced to its last stages.—*Medical Times and Gazette*, January 1, 1853.

22. *Cirrhosis of the Liver*.—M. MONNERET, believing that the term cirrhosis has been applied to very different pathological conditions, endeavours in these papers to speak of it with some precision, while relating the cases of the disease which have come under his own observation. He defines cirrhosis as a chronic and apyretic affection of the liver, characterized by more or less impediments to the hepatic portal circulation, which leads to peritoneal effusion, dilatation of the collateral veins, and often to oedema of the extremities, and hemorrhages from the various mucous surfaces.

The *anatomical changes* which almost always accompany these symptoms are induration and atrophy of the entire tissue of the gland, or of its vascular portion, with the yellow change of tissue, whether granular or not. The retraction of the hepatic substance gives rise to the diminished size of the organ, and at the same time that the portal veins become less visible, the yellow portion continues to predominate over the other, until it entirely supersedes it. The thickening of Glisson's capsule and the serous layer that lines the liver completes the anatomical character.

M. Monneret's memoir is based upon twenty-four cases, in fourteen of which autopsies were performed, this being the entire number of cases he has been able to meet with during the ten years his attention has been directed to the subject. He has compared these cases with forty others of the various lesions of the organ, as also with fifty cases of disease of the heart, in which the condition of the liver was examined.

He has taken great pains in the *measurement* of the liver, by means of plesimetry, having accurately measured in this way 100 patients. In a healthy man lying in the horizontal position, the hepatic dullness commences four centimetres (about 1½ inch) below the right nipple, and terminates at the edge of the ribs, which forms a tolerably exact natural inferior boundary. At the medium line, it is placed behind the scaphoid cartilage, passing a little towards the upper part of the epigastrium. Posteriorly and laterally it ceases at the level of the ribs. The following figures indicate the normal distances which separate the upper line of hepatic dullness from the level of the ribs: In thirty-one cases its mean height at the *median line* was 5.62 centimetres: its minimum 1.5, and its maximum 9.5. To the *right nipple* the mean was 12.64 centimetres, the minimum 7.8, and the maximum 18. In the *axillary* region, the mean was 10.57, the minimum 7.3, and the maximum 13. In the *scapular* region, the mean was 9.11, the maximum 14. In twenty-five cases the hepatic dullness commenced at four centimetres below the nipple. The *thoracic vibration*, perceptible to the hand, while the patient counts with a loud voice, extends three

or four centimetres below the upper limit of hepatic dulness. In cirrhosis, the normal limits of hepatic dulness have never been found exceeded. In some cases they are scarcely diminished, while in nine have they been so by more than five centimetres. The meteoric state of the intestines renders exploration sometimes difficult by pressing the liver into the thoracic cavity; but when authors speak of hepatic hypertrophy they confound other lesions with cirrhosis.

The *peritoneal effusion* is of very slow occurrence, fluctuation long continuing obscure, and the patient often not being aware of tumefaction of the abdomen. The progress of the dropsy is gradual, and there is not observed those alterations of increase and diminution seen in dropsy arising from hepatic congestion, whether connected with disease of the heart or other lesions. The fact of the dropsy becoming established before anasarca of the extremities, has been too much generalized. The integuments of the abdomen becoming infiltrated sooner than can be explained by the abdominal distension is explicable by the obstruction to the venous circulation.

In like manner, the *dilatation of the veins* of the abdominal and thoracic parietes may become considerable before any notable effusion occurs. The most delicate *capillaries* undergo dilatation, so that their elegant arborescence becomes perfectly visible, and that by no means always when distension is greatest. These facts are explicable by the obstructed state of the portal circulation. In some cases, however, no such dilatation and inosculation of veins is present, ascites existing alone. In this point of view, it is interesting to remark that in five out of ten of Dr. Hillaret's cases of portal phlebitis there was no effusion. It is probable that in some of these, as well as in some of the cases of cirrhosis, the obstruction has only been partial, and hence the absence of some of the usual symptoms.

Not only, however, is the hepatic circulation thus disturbed in cirrhosis, but in all probability the *composition of the blood* has undergone change, giving rise to the *hemorrhages* which are of such frequent occurrence. Epistaxis, slight in quantity, is the form that M. Monneret has usually met with; in some cases the stools have been tinged with blood.

We cannot abstract the details of the eleven *autopsies* M. Monneret furnishes an account of; but may advert to his summary of the most common lesions. 1. The liver is sometimes diminished by a third or one half its size. 2. Its surface presents more or less prominent lobules, separated by whitish furrows. The normal disposition of the hepatic structure being exaggerated. 3. The capsule of Glisson is thickened, whitish or opaque, more close and resisting, and intimately adherent. 4. This capsule is found in a hypertrophied state, in the interior of the parenchyma, as whitish lines, inclosing the hepatic lobules and sometimes yellow granules. 5. The change in the proportion of the two substances of the liver has long been admitted as a characteristic of cirrhosis; but while acknowledging the convenience of the expressions red or vascular, and yellow or bilious portions, and believing the affection is one which obstructs the circulation in the *vena porta*, Monneret doubts the correctness of these anatomical statements. M. Lecheboullet believes in the conversion of the bilious into fatty cells, and Monneret has always found by the microscope that a large quantity of fat incrusts the biliary cells. He believes, however, that this fatty transformation itself is dependent upon the atrophy of some element of the parenchyma. 6. The extreme frequency of peri-hepatic peritonitis is of importance in the anatomical history of cirrhosis; for it may be asked whether this phlegmasia induces induration of the proper membrane of the liver, the loss of extensibility of which may be the cause of the hepatic retraction. 7. The degree of induration of the liver varies, being in some cases comparable to scirrhus, and apparently due to the predominance of the celluloso-fibrous portion. 8. There is great dryness of tissue from paucity of blood. 9. The alteration may occupy an entire lobe or even the entire organ; but it may do this in very different degrees. 10. As a negative character worthy of note, it may be mentioned that there are no lesions of the bile-ducts, and the bile is apparently normal. 11. In several cases a new circulation has been found established in the fibro-cellular partitions of the lobules, a brilliant arterial network being dis-

tinely visible. This may be regarded as a supplementary circulation of the hepatic artery, it having been observed in cases in which the vena porta was entirely or partially obstructed.

In respect to the *causes* of this affection, the habitual excessive use of alcohol is undoubtedly one; but in other cases bad and insufficient diet is alone discoverable. These circumstances explain the frequency of disease of the alimentary canal, which is observed in cirrhosis. The frequency with which inflammatory disease of the liver has preceded this condition is undoubted; but whether the thickened state of the capsule be an extension of this, or one of the lesions accompanying organic atrophy, is doubtful. Inflammation is not essential, as in certain cases it has not prevailed. The congestions of the liver which are so frequently seen in disease of the heart are not, as has been stated, first stages of this affection. Their effect is to lead to dilatation of vessels, while cirrhosis leads to their obliteration. In cirrhosis, the yellow secreting tissue, formed of biliary cells, and yellow granules, is not hypertrophied, and only becomes more visible and prominent from the atrophy of the portal and vascular system. In hypertrophy, the functional activity gives rise to jaundice, but not to obstruction of the circulation; while in active congestion and phlegmasia, even when slight, characteristic symptoms are present, as increase in size, tenderness, irregular fever, fibrinous blood, and icteric urine.

For the *treatment* of so fatal a disease, M. Monneret has little to recommend. At least temporary benefit is sometimes derivable from alterative doses of blue pill, combined with Vichy or soda water, and alkaline or sulphurous baths. The diarrhoea and vomiting so obstinate in some of these cases are best treated by large doses of bismuth.—*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Archives Générales*, tom. xxix. & xxx.

23. *New Researches in Hematology*.—In our last No., p. 215, will be found the conclusions drawn by MM. BECQUEREL and RODIER from their examinations into the changes produced in the blood in various diseased states, and which they presented in a memoir read before the Academy of Sciences in Paris, on May 31, 1852. We shall now present some of the details of these researches.

The diseases which come under notice in the first part of their memoir are, 1. Anæmia and chlorosis; 2. Bright's disease; 3. Dropsies which appear connected with an alteration in the blood; 4. Organic diseases of the heart; 5. Scurvy. In the second part, they propose to examine the modifications which the blood undergoes: 1, in the phlegmasia; 2, in puerperal diseases; 3, in diseases of the brain; 4, in some other acute diseases.

Anæmia and Chlorosis.—In anæmia, the specific gravity of the blood is low (average 1049.93); the red corpuscles are diminished (100.13 instead of 128); the solid constituents of the serum are not changed; the fibrine is increased (3.72 instead of 3). These results were arrived at from the examination of ten individuals. In chlorosis, the quantity of globules was found to vary, in six cases, from 45 per 100 to 109; the fibrine varied from 3.06 to 5.01; albumen was present in its normal proportions.

MM. Becquerel and Rodier lay much stress on the distinction between anæmia and chlorosis. They consider this subject under the head of: 1, causes; 2, mode of development; 3, symptoms; 4, physical signs; 5, composition of the blood; 6, progress and duration of the disease; 7, treatment. The principal distinctive features are the following:—

Chlorosis appears gradually, without apparent relation to any cause; anæmia is the immediate result of some debilitating influence. In chlorosis, nervous symptoms predominate; the skin is of a yellowish-green tint; disturbance of the catamenial function is almost always present; in anæmia, the nervous symptoms are secondary, and principally consist in debility and lassitude; perverted sensations are rare, and, when they occur, are less intense than in chlorosis; menstrual disorders may be entirely absent (putting aside anæmia resulting from uterine disease); the loss of colour in the skin is not generally accompanied by the yellowish-green tint. In chlorosis, there is often a murmur at the base of the heart, accompanying the first sound, and heard along

the aorta; this is often absent; but, in anæmia, it is always present. In chlorosis, the venous murmur is more frequent than in anæmia; and musical bruits are much less frequently heard in anæmia than in chlorosis. In chlorosis, the composition of the blood may not be materially changed; and when it is, it may not be in proportion to the symptoms: in anæmia, the change in the blood is constant, and the intensity of the symptoms is in direct relation with such change. In chlorosis, the quantity of fibrine is generally increased; in anæmia, it is diminished. Chlorosis, when left to itself, is often of long duration; anæmia tends to recovery when the cause is removed. In chlorosis, the principal indication is to give chalybeates; and the secondary indications are, to act on the mental feelings, and to attend to the influences of dwelling, aeration, and food. In anæmia, the principal indication is the removal or diminution of the cause, whenever this is possible: hygienic treatment is next in importance; while quinine and iron are less likely (except when the anæmia results from hemorrhage) to be of service than in chlorosis.

Bright's Disease.—In the acute stages (acute congestion of the kidney), MM. Bequerel and Rodier have examined the blood of fifteen persons. The quantity of albumen is diminished, more so as the disease advances; and the specific gravity of the blood decreases in proportion. The extractive and fatty matters are somewhat increased; milky serum was found in two of the cases. This state of the serum they believe not to be due to fat, but to a peculiar condition of the albumen.

In the treatment, general and local bleeding were employed successfully in most of the cases; diuretics are hurtful, by increasing the renal congestion. Vapour-baths seem useful in removing the consecutive dropsy; and cinchona, with a nitrogenous diet, will give strength to the impoverished serum. Chalybeates are perfectly useless.

In the chronic form of Bright's disease, the specific gravity of the blood is lowered from 1060 to 1045.6; the red corpuscles are also diminished; while the fibrine is increased: the albumen is much diminished.

Dropsies.—These may depend either on obstacles to the circulation, in which case, there is no necessary change in the blood: or they may arise from a diminution of albumen in the blood. The latter form may be divided into two groups, *cachectic dropsies*, arising from Bright's disease, insufficient food, long-continued losses of blood, as from hemorrhoids, and chronic diarrhœa, cancerous cachexia, and paludal cachexia; and *acute dropsies*, as from suddenly suppressed menstruation, scarlatina, prolonged chills, sleeping on the ground, &c.

In the treatment of cachectic dropsy, the first indication is to remove the cause, when possible. Hemorrhages, fluxes, and diarrhœa may be arrested, or even cured; want of food may be repaired: privations and unhealthy dwellings may be remedied. But in some cases, the removal of the cause is more difficult; for instance, in paludal cachexia, the patient must be withdrawn from the malarious influence, and its effects must be counteracted. Sometimes the cause of the dropsy cannot be removed, as when hemorrhage depends on an organic disease—cancer, for instance.

Cinchona in various forms, and bitter tonics, especially gentian, are most useful; iron is also indicated when there is much loss of colour, and when there are vascular bruits, or when analysis has directly shown a diminution of red particles in the blood. The use of tonics must be continued for some time. Stimulant frictions may be employed; they tend to favour the absorption of the effused fluid in the subcutaneous cellular tissue. If it becomes necessary to treat the dropsy in a direct manner, purgatives are too debilitating; diuretics are not trustworthy: but vapour-baths may be had recourse to with benefit. The hygienic treatment consists in a generous diet, warm clothing, moderate exercise, and habitation in a mild climate. In acute dropsy, if albumen be found in the urine, and there are febrile symptoms, general bleeding almost always reduces the quantity of albumen, and arrests the course of the dropsy. The application of leeches or cupping-glasses to the region of the kidneys is also sometimes of service. To remove the dropsy, purgatives may be used with less inconvenience than in the cachectic form; but dry vapour-baths are preferable. Diuretics are objectionable; stimulant frictions may be employed with

benefit. To raise the quantity of albumen, cinchona and bitters are often useful; but, as the diminution of albumen is not so great as in cachectic dropsies, the proper employment of hygienic measures is almost always sufficient to bring it back to its normal proportion.—*Gaz. Méd. de Paris*, June, 1852.

24. *Coexistence of Cancer and Tubercle*.—Dr. JENNER and BRINTON, in a report made to the Pathological Society of London, made the following references to pathological authorities to show the compatibility of cancer and tubercle. Seven undoubted cases in which these deposits were found conjoined in the same subject are published by Dr. Walshe. Dr. Hughes Bennett has not seen or heard of a well-authenticated case in which recent tubercle and cancer were associated; but he observes, that "instances are common where individuals have tubercles in youth, and cancer in adult age." In 153 bodies affected with cancer, Lebert found 17 whose organs exhibited tubercle associated therewith. The same author has published in "*Virchow's Archives*," for the present year, among other cases of cancer, one in which colloid cancer of the pylorus and tubercles of the lungs were coexistent. Lebert seems to believe that tubercle may be developed in individuals already suffering from cancer, but he has met with no instance in which cancer supervened during the progress of phthisis. On the other hand, Rokitansky considers that cancer is more likely to follow tubercle than tubercle to follow cancer. He doubts whether the two deposits have any more relation to one another than that of coincidence. But he states that suppurating cancer is sometimes accompanied by a whitish, glutinous tubercle, which he regards as tuberculous disease of the already cancerous fibrine.

At the same meeting, Dr. JENNER brought before the Society a case in which he believed medullary cancer and tubercle were present together in the lungs. The patient from whom the specimens were taken was a man in the middle period of life, who had died under the care of Dr. Hall Davis. Encephaloid disease was found springing from the bones of the head and in the lungs. Gray tubercle also existed in the apex of one lung. Dr. Hall Davis, Dr. Walshe, Dr. Bright, and Dr. Jenner himself, entertained no doubt, after a careful inspection of the morbid parts, that cancer and tubercle were really coexistent in this instance. Dr. Jenner was alone responsible for the microscopic appearances. He found, in the lung, cells characteristic of medullary cancer, and in other parts the compound granular cell described by Lebert as distinctive of tubercle. He had brought down these microscopic specimens, so that the members might form their own judgment respecting them.—*Med. Times and Gaz.* Nov. 13, 1852.

25. *Relation between Hysteria and Phthisis*.—Dr. T. THOMPSON read before the Medical Society of London a paper on this subject, the object of which was to show first, that hysteria often simulated phthisis; secondly, that it tended to aggravate certain symptoms of incipient consumption; thirdly, that as phthisis becomes established, hysterical symptoms grow less characteristic and various, and finally disappear; fourthly, that when the two diatheses coexist, both the prognosis and treatment must be modified. The author suggested some points of distinction between the true and the simulated forms of phthisis, especially the peculiar barking cough in the latter; the relative disparity between the local and general symptoms; the inconsistency of the loquacious complaints which the patient uttered, with an indifferent or sprightly countenance; the pain under the left mamma; sensitiveness of the skin, especially over the sternum and between the shoulders, and a sense of impending suffocation when pressure was made on these two points simultaneously. Hemoptysis was in the early periods of phthisis often increased, and might, indeed, be altogether induced by hysteria without the existence of tubercle. Under such circumstances, it not unfrequently recurred at fixed periods both of the day and night. The profuse discharge of blood which occasionally attended hysterical hemoptysis, might be due partly to sudden congestion, and partly to a diminution of the components of the crassamentum in the blood. Dr. Thompson believed that hysterical congestion sometimes occurred to such an extent in the lungs,

as to occasion evident dulness on percussion; but such a sign was not stationary, like phthisical dulness, but apt to vary from one side to another. The author suggested that local congestions occurred in these cases in consequence of the incessant attention directed by the patient to the lungs or other organs, which probably disturbed their functions; and a continued state of expectancy for morbid action (as in the instance of cramp) tends to its renewal. Dr. Thompson related several cases in support of his statements. In one, pseudo-phthisis was brought on by mental disquietude, and was rapidly benefited by change of scene. A second was troubled with incessant cough, and had profuse hæmoptysis, occurring at stated periods of the night. A long time elapsed before these symptoms yielded to treatment, yet the grounds for suspecting phthisis were extremely slight. In a third case, the respiration was accelerated to 70 in a minute, with difficult and painful inspiration. This symptom, however, soon yielded to remedies calculated to invigorate the nervous system and relieve spinal irritation, although certain local signs, such as the family history, and the appearance of the gums, naturally excited apprehensions as to the ultimate result. The fourth case was that of a young woman who had been for nearly five years subject to varied hysterical symptoms, gastrodynia, palpitation, and cough. Dulness was detected on percussion, which shifted from one side to the other. Gradually, however, the hysterical symptoms disappeared, and the indications of pulmonary affection were fixed to one side, although considerable advantage was derived from the administration of cod-liver oil and other treatment. Dr. Thompson concluded his communication by remarking—1st. That when phthisis commences in hysterical subjects, the symptoms are often aggravated to an extent disproportioned to the amount of organic change. 2dly. That hysteria and phthisis, although not incompatible, are uncommon; so that, as the latter disease advances, the former usually retreats; and that the coexistence of hysterical symptoms, especially if severe, may encourage a somewhat hopeful prognosis, even when phthisis is established. 3dly. That when these two disorders are concurrent, a more "hardening system may commonly be adopted than is expedient in cases of unmodified consumption."—*Med. Times and Gaz.* Nov. 13, 1852.

26. *On the Relations of Vaccination and Inoculation to Smallpox.*—Dr. WALLER Lewis read a highly interesting and valuable paper on this subject before the Epidemiological Society. The following are some of the questions raised by this paper that well deserve further elucidation, and which would have received it by the author, had he not been prevented by his wish to make the communication as practical as possible, and his desire to leave time for discussion of the principles he brought forward. Does vaccination act as a protective or a mitigator of any other disease than variola—measles, for instance?—Is it a law that revaccination is effective in the ratio of the distance of time from the previous vaccination? Can a systematic supply of fresh vaccine virus be kept up by artificially inoculating cows? What are the advantages of such lymph, if it can be obtained, over the often-transmitted lymph? What is the influence of sanitary conditions on smallpox? How is epidemic smallpox affected by the copresence of another epidemic—cholera, for instance? Does variola ever arise from any other cause than contagion? Is it ever formed *de novo*, as from malaria, noxious and putrescent gases, or by the aid of these or similar causes? Can variola lie dormant in a constitution a period of six months or more? Does the disease in dogs, termed distemper, constitute the analogue of smallpox?

"The object of the paper (said the author) is to endeavour to deduce some general laws respecting smallpox and vaccination, that may pave the way for clearing up some of the apparent mysteries and incongruities that now surround these subjects. As one of the members of your Committee that has been for some time engaged in preparing a report on these two subjects, some thousands of letters have passed through my hands. Many of these letters contain histories of remarkable cases that have been attended by practitioners, not only in this country, but throughout the world; and many contain the results of their experience of the disease. In the foreign correspondence that has taken

place between myself, as one of your foreign correspondents, and the Ambassadors, Ministers, Syndics, Sanitary Boards, and Medical Academies of nearly every portion of the civilized world, many interesting and important particulars have been gleaned, which, although they could not have been extracted and thrown into the Report of the Committee without making it too ponderous and bulky, have been made use of when they have served to illustrate a position or to fortify a practical deduction. Some other cases have been sketched, which, without tending directly to develop a law, are interesting as furnishing subjects for further inquiry. In a large portion of this paper the language is my own, but, in some instances, the cases are taken *verbatim et literaliter* from the correspondents' own letters. This will account for the provincialisms to be met with occasionally." We commence by giving two or three cases that show the efficacy of vaccination: "The father of a family obstinately refused to have his children vaccinated. He had three daughters by his former wife, four by his present one. The eldest of the second family had been vaccinated without his knowledge; the others he had forbidden. All the children of both families took smallpox, except the one child that had been vaccinated clandestinely." "Three children, A, B, and C, the daughters of Mrs. S., who had hitherto refused to have her children vaccinated, were exposed to smallpox, owing to a sister being brought home while labouring under it. I had only enough lymph to vaccinate A fully and B partly; C was left to take her chance. A took vaccinia perfectly, and entirely escaped smallpox; B took imperfectly, and had the disease mildly. C took the disease fully." "I attended a case of smallpox in a cottage where there were two unvaccinated children, the parents not approving of the practice. As a personal favour, I was allowed to vaccinate one of them. Vaccinia was perfectly developed, and saved that child; the other had a most severe attack of smallpox." The author continued: "I believe I may say, both from my own experience and the innumerable cases that have come before me as a member of your Smallpox and Vaccination Committee, that the most certain way of taking smallpox is by medical students dissecting smallpox subjects. A very large proportion of those medical men who have taken smallpox after vaccination have had the disease from this cause. The following case will furnish a very powerful proof of the protective power of vaccination, even against exposure in that way: 'Upon commencing my hospital studies at St. Bartholomew's, in 1829, I took part in the dissection of seventeen smallpox bodies. Previous to commencing upon them I was revaccinated, but without effect. I then, without fear, began dissection. The third subject was an extremely bad confluent case, and scarcely cold. Whilst making the first incisions through the integuments, with the scalpel literally dripping with matter, I wounded the index finger of the left hand, regardless of which I continued dissecting during that and the following day. I felt indisposed in the afternoon of the second day, passed a very restless night, followed by one day's severe fever. Over the seat of the wound a single pustule of modified smallpox appeared. After this I had not the slightest inconvenience, and went through much exposure to smallpox with safety.'"

Vaccination more protective than Inoculation.—"Some years ago Miss M. G.— married a tradesman in London. She had been vaccinated when a child, but ineffectually. About a month after her marriage, she fell ill with confluent smallpox. During the attack, her husband and a young sister were constantly with her. These had been vaccinated when children. On being called to the case, I advised the husband to be revaccinated, and I took away the younger sister, sending in her place an elder one who had been inoculated. The father, an aged man, who had also been inoculated, went also, and remained with his daughter till she died. The result was this: The husband, who, in his anxiety, neglected to be revaccinated, escaped the disease notwithstanding. The younger sister was slightly indisposed for a few days, but had no eruption. The two who had been inoculated, viz., the father and elder sister, both had smallpox eruption and fever." The Doctor then read several cases in which vaccination had been protective from smallpox, where a previous attack of smallpox had failed to be so.

Measles rendered milder by Vaccination.—"Jöler has described an epidemic of measles that took place in the Retzat Circle, in Bavaria, in the district where he himself resided. He says that the disease was much milder among the vaccinated than among the unvaccinated. 15 in 52 died among the non-vaccinated, while barely 1 in 300 died among the vaccinated, showing that measles was 86 times more fatal among the former than the latter." Examples of careless imperfect vaccination were then dwelt on, and the author stated that his opinion was clear and decided on the point, that where well-marked normal cicatrices were not left, the operation should be accounted a failure, and repeated, although he owned that this was not entertained by many practitioners in this country and Germany. Vaccinating from revaccinated persons, from those who had been inoculated, and from such as had previously had smallpox, was strongly denounced, as vaccinia must be extremely modified in such cases. The author added: "When we interest ourselves strongly in the propagation of vaccination, we must guard ourselves from furnishing arms to its adversaries. And is it not furnishing them with arms to employ a virus of which we are not certain?" A most interesting collection of cases was then read, in which smallpox had attacked the same individual three or four times; among others, the following, that had come under the author's own attention was narrated: "Robert D., a tradesman living in North Audley-street, had smallpox the first time at the time of his birth, his mother suffering from it at her confinement. He was attacked with the disease a second time when a boy at school, between nine and ten years of age. When eighteen years of age, he took it for the third time from his sister, who died of it. All the attacks were severe, but the last the most so. He lost his hair and his nails, and the skin of his feet; he was blind for several days, and his life was despaired of. However, he is still alive, and not much disfigured. He was never vaccinated nor inoculated. I believe, if again exposed to the disease, he will take it again." Cases were then adduced, to show that several members of the same family appear sometimes to show great susceptibility to take the disease. The following curious case of smallpox in the lower animals was then adduced, the author adding, that any similar well-attested cases would be very valuable additions to the facts collected by the Society on this subject. "The following case was related to me by a lady of rank, on whose veracity I can place the greatest reliance. Some years ago, just after her confinement, she was seized with smallpox. It became necessary to have her breasts drawn, and, as no child could be obtained, recourse was had to a puppy, which answered the purpose. At the usual time the puppy sickened, and had the disease known by the name of the 'distemper.' It is said that vaccination, when successfully performed on puppies, will almost to a certainty prove a prophylactic against distemper." Then followed some interesting cases of individuals who could be neither vaccinated nor inoculated. The last cases adduced were of individuals who appeared to have perfect immunity from smallpox. "I have detailed the case of Robert D., who evidently possesses a strong innate susceptibility to the action of the smallpox virus, as shown in his having already taken the disease three several times. I have now to draw your attention to a case the most directly opposite to this. Strangely enough, it is that of his own brother Thomas. From the elder brother Robert, as well as a sister, having taken smallpox, the parents believed that all their children must take the disease, and refused to have the subject of this case vaccinated or inoculated. He was accordingly exposed when a child to the contagion, lying in the same room with his sister, while she was suffering from the disease, as well as waiting on his brother in his second and third attacks. Although since that time he has been several times exposed to the contagion, he has never felt the slightest ill effects from it." "Examples of persons possessing a natural immunity from the disease are rather numerous. Dr. Jackson, of Philadelphia, saw a man at the Smallpox Hospital, engaged in laying out and burying the dead, who had never had an attack of the disease. He had been frequently inoculated and vaccinated, but always unsuccessfully. Van Swieten speaks of a physician, seventy years of age, who had practised through numerous epidemics of the disease, but had never taken it. Diemerbroeck states that immunity from

smallpox was a privilege of his family. It was possessed, he asserts, by his grandfather, grandmother, his father, and himself." The author drew the following deductions from the cases adduced:—

1. That vaccination is a most eminent protection against smallpox.
2. That when perfectly performed it is almost, and, in some instances, more protective, than inoculation or smallpox itself.
3. That it appears to render some exanthemata, *e. g.* measles, milder than they would have been otherwise.
4. That neither vaccination, inoculation, nor smallpox, guarantees the individual, in every instance, from smallpox.
5. That smallpox attacks some persons three times, or oftener.
6. That there exist certain individuals who have perfect immunity from vaccination, inoculation, and smallpox.
7. That great susceptibility to, or perfect immunity from, smallpox, is sometimes found to be common to several members of the same family.
8. That sanitary conditions have a very powerful effect on the spread of smallpox in common with other epidemics.

Conclusions.—The author thus terminated his most interesting communication: "It appears, from the foregoing cases and the deductions therefrom, that the laws that regulate the apparent mysteries of smallpox are as follows:—

"A. Smallpox is a disease to which almost every person is liable once in his lifetime unless protected.

"B. But there is a small fraction of the community who appear to enjoy an exemption from this law; no degree of exposure, either to vaccination, inoculation, or casual smallpox, causing them to take vaccinia or variola.

"C. That there is a certain portion, on the other hand, who are, unfortunately, in the exactly opposite condition. These individuals, whose systems appear to present a soil peculiarly favourable to the development and spread of smallpox virus, are eminently susceptible of the disease. It is to this class that belong those persons who have repeated attacks of variola, who take smallpox after being inoculated or vaccinated. I believe that for such persons there is no safety but in repeated vaccination.

"D. And, lastly, that between this latter class and that favoured portion of the community that possess perfect immunity, there exists every shade and degree of susceptibility.

"These laws explain the apparent inconsistency respecting the protective powers of vaccination. In this view, all those individuals, forming an enormous majority of mankind, who possess an ordinary moderate degree of liability to smallpox, are completely guarded against the activity of smallpox virus either by perfect vaccination, inoculation, or smallpox; while others, who have a much greater susceptibility, will neither be protected by one or other of these expedients."—*Med. Times and Gazette*, Jan. 15, 1853.

27. *On the Use of Collodion in Smallpox and Erysipelas.* By Dr. CHRISTEN, Assistant Physician to the Prague General Hospital.—It has long been a desideratum in medical practice to prevent, if possible, especially in females, the scars usually left by smallpox on the face and on other exposed parts of the body. To this end the most dissimilar means have been tried and recommended, and have been again, in course of time, laid aside, as at least useless, if not directly injurious.

Very recently, it was thought that a preservative, capable of meeting all requirements, had been found in collodion. Nor was this agent long without receiving its share of commendation. Although many considerations occurred *a priori* to the mind against its use, it could not be directly condemned, in opposition to the testimonials in its favour, without repeated and extensive trials of its efficacy in cases of various intensity. The never-failing cases of variola in the Prague General Hospital, which were particularly numerous in the month of May, afforded sufficient opportunity of testing the value of collodion in many points of view.

The collodion was in most cases employed in the stage of papular development (*stipphenbildung*), the earliest period when, in general, the diagnosis of

variola could be made with certainty. It was applied over a greater or less extent of the face and extremities, and in two cases the entire face was smeared with it. The results were as follows: As the collodion dried and shrank, the redness of the papulae diminished, the slight œdema of the skin disappeared, and the covered and adjoining parts became tense. With the progressive development of the pustules, and the accompanying increase of infiltration of the skin in their immediate neighbourhood, this tension became intolerable, especially in those cases in which the entire face was covered, and so annoyed the patients that means had to be taken, before the termination of the variola, for the partial or complete removal of the collodion. The further development of the variola was neither prevented nor lessened, but only modified, by the papulae under the layer of collodion forming even points of pus, which, as the suppurative process advanced, became confluent, and in severe cases formed a nearly uninterrupted layer. The evaporation of the liquid parts was so impeded that fluid pus was still found under the collodion, when the pustules on the other parts of the body had dried and crusted.

In those cases in which the collodion had to be partially or entirely removed on account of the intolerable tension, capillary extravasations took place soon after the pressure was removed, in the form of numerous ecchymoses under the epidermis, loosed from the corroded corium, which soon assumed a dark colour, and gave the patients a still more repulsive appearance. The suppuration had, as a natural consequence of the prolonged retention of the pus in the fluid state, spread more broadly and deeply; the scars, instead of being prevented as was intended, were more extensive and deeper, and were plainly perceptible even in those lighter cases, in which the surrounding parts, which had not been smeared with the collodion, presented scarcely a trace of a cicatrix.

The collodion also appeared, especially when extensively applied, to exercise an unfavourable influence on the general course of the disease. That it must, by suppressing the function of the skin, have an absolutely injurious effect when its application is general, and uninterruptedly kept up, is, according to physiological laws and our experience of the operation of analogous influences on the human organism, as clear as possible. But the arrest of evaporation, and the great extent of matter under the covering of collodion, appear to be of still greater importance, promoting as it does in a great degree the absorption of the pus, and favouring extremely that state of pyæmia which is so apt to occur when the eruption is extensive.

From the foregoing observations, thus briefly related, the employment of collodion in smallpox consequently appears to be not merely useless, but also directly injurious and inadmissible. In mild cases of variola, from which the favourable results that have been recorded appear to be derived, its use is superfluous, and, in severe cases, with extensive eruption, from which our present conclusions have been chiefly drawn, it is absolutely prejudicial and objectionable.

As to the influence of collodion on the course of *erysipelas*, the cases I have observed justify the following remarks: In symptomatic erysipelas, depending on internal causes, its effects appear at first to be very surprising; the redness disappears; the swelling and pain become less, and a feeling of tension and numbness occurs in the parts which have been smeared with the collodion; nevertheless, the general phenomena, and the complications which may be present, continue unaltered, and in a short time, sometimes only a few minutes, the erysipelas commences to pursue its course unchecked, in the neighbouring or in distant parts of the body, even when the repeated application of the collodion follows closely on its track. The effect then is, like the remedy itself, merely local and transient. Collodion fulfils the indication as little as other means of demarcation which have been recommended; as, for example, cauterization with nitrate of silver or with acids, inunctions with mercurial ointment, &c. Facts, apparently of an opposite nature, in my opinion probably refer to cases in which the collodion was applied at a time when the process was about to terminate, or where, without its employment, the erysipelas would not have advanced further.

The employment of collodion appears to be more useful in erysipelas arising from local causes. In erysipelatous wounds, ulcers, slight burns, erysipelas from insolation, and similar cases, its use is decidedly advantageous. Although I have not had the opportunity of making many observations on this part of the subject, I will briefly communicate the results I have obtained. The immediate effect is the same as in symptomatic erysipelas; the redness, swelling, pain, and vesication rapidly disappear, and depots of pus do not so readily form. In a case of gangrenous erysipelas of both eyelids, the repeated and tolerably extensive use of collodion on the surrounding parts, after the gangrene was arrested and the greater part of the gangrenous portion had separated, speedily removed the infiltration of the edges and a burrowing abscess, as slight as could well be expected in that situation. 1. a case of erysipelas with very considerable vesication on the backs of both hands, and reaching to the wrist-joint, the consequence of severe insolation, the collodion was, for the sake of comparison, abundantly applied to one hand, while the other was merely treated with cold fomentations. On the application of the collodion the pain immediately ceased, and was replaced by a feeling of numbness and stiffness. The diffused vesicles and the very considerable œdema rapidly subsided, and the course of the disease was thereby much shortened; while the vesication on the other hand increased in size and extent, and when emptied filled again, the œdema subsided but very gradually, and the pain was very much aggravated by the exposure of the corium. On the fifth day after the patient's admission into hospital, the hand which had been treated with collodion, and in the intervals with cold applications, had regained its normal volume. The pain, œdema, and blisters had disappeared, and nothing remained but a slight stiffness of the hand and a parchment-like dryness of the epidermis, while the other hand was, so late as the tenth day, considerably swollen and painful. In the instances I have mentioned, and in slight burns, the use of the collodion has proved of decided advantage, and it deserves to be recommended in similar cases.—*Vierteljahrsschrift für die praktische Heilkunde*, Band 4, 1852. Originalaufsätze, p. 92.

28. *On the Application of Gutta-Percha in the Treatment of Diseases of the Skin.* By ROBT. J. GRAVES, M.D.—“When a wound or injury inflicted on any portion of the surface has exposed the structures naturally covered by the skin, immediate irritation is the consequence, and this never entirely ceases until nature has been able to provide some substitute for the abraded or otherwise destroyed integument. The manner in which the denuded surface is covered with a temporary protection, sufficient to guard it against the contact of the air and other external injurious agents, varies according to the circumstances of the case: in many instances blood coagulated on the wound adheres firmly and remains in contact with every point, until the reparative efforts have healed the parts and covered them again with a new skin. When such a process takes place favourably, this most simple of all dressings effects a cure without any external discharge or inflammation, and enables the parts to be reformed, or, as the late Professor Macartney termed it, remodelled by the first intention.

“Of late years, surgeons have derived much advantage from the use of different imitations of this natural process, and have employed at first solutions of collodion, and finally gutta-percha dissolved in chloroform, for this purpose. Reflecting upon the great superiority of this method over the others formerly used, it struck me forcibly that it was capable of a much more general extension, and that the chloroform solution of gutta-percha might be usefully employed in the topical treatment of cutaneous affections. The more I thought on this subject, the more sanguine I became that this new agent would form a useful addition to the list of remedies employed in combating a class of diseases confessedly so obstinate and so difficult of cure. The result of repeated trials, I am happy to announce, has not disappointed my anticipations, and consequently I now feel myself called on to lay before the profession a statement of those cases in which this application has either effected a cure, or mainly contributed to the successful treatment of the complaint.

“When the saturated solution of gutta-percha in chloroform is spread by

means of a camel's-hair pencil over a portion of the skin, the solvent fluid rapidly evaporates, leaving a delicate and extremely thin pellicle of gutta-percha firmly adhering to the part: The peculiar toughness of gutta-percha prevents this pellicle from being brittle, and therefore it is much less liable than collodion to crack and fall off in small scales. On the forehead or face, where it is not affected by friction of the clothes, it remains firmly attached for five or six days, or even longer, but on other portions of the surface it is often rubbed off much sooner; over dry eruptions of the skin it lasts longer than over those which are moist, and over smooth and firm spots, of course longer than over those covered with rough morbid scales, or loosely adhering crusts. Before the application of this solution, therefore, the practitioner will do well to render the portions of the cutaneous disease to which he intends to apply it as free as possible from crusts or scales, by means of poultices, alkaline lotions, &c. When this precaution is taken, he will find that the artificial cuticle which he has applied with his brush will in certain cases act most sensibly on the subjacent disease, diminishing inflammation and its consequences, and powerfully contributing to the restoration of the healthy structure of the skin.

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"The transparency of this artificial membrane enables us to watch the progress of the subjacent diseased skin, and its colourless nature prevents it from disfiguring the face when the eruption occupies that part. Its perfect cleanliness, too, is no small advantage, and affords a very agreeable contrast when compared with the usual ointments, &c.

"My observations confirm what reasoning on this subject would lead us to expect, that this application is more suited for dry, scaly, tubercular, and chronic diseases of the skin, than for acute affections attended with much oozing of fluid and comparatively active inflammation.

"Still, its good effects are by no means limited to chronic diseases of the skin, or to those of a scaly, dry nature; for, as will hereafter appear, I have seen it decidedly useful in the spreading form of impetigo. My experience of this remedy makes me very anxious to witness its application in the first stages of erysipelas, as analogy leads me to hope for good results in such cases.

"Of course, the patient must aid the efforts of the physician, and must, as far as possible, abstain from everything which tends to rub off or injure the artificial cuticle; for its virtue ceases when its continuity is broken and the external air finds admission to any part of the diseased surface.

"Early in the month of November, 1851, I was called to visit Mrs. C., from —. She was about 50 years old, full and plethoric; the mother of a large family, and, until the disease of which she then complained of commenced, generally healthy. About two years before, she observed small spots of impetigo on her limbs and body, which succeeded each other, some healing while fresh ones appeared. During summer, she was nearly free from them; but last autumn they returned with greater virulence than ever, and have since increased both in size and numbers, some being larger than the hand, and attended with constant oozing of fluid, which imperfectly coagulates, forming loose and thin crusts. The itching at night is intolerable, and nearly deprives her altogether of sleep. I employed the usual general and topical treatment for a fortnight, with alleviation of her sufferings, when luckily I thought of trying the saturated solution of gutta-percha in chloroform, and had it carefully applied by Mr. Nicholls, of Dawson Street, at first by way of trial, to one of the smaller spots, and on the following days to each of the larger patches of eruption in succession. The relief obtained was such that it appeared almost incredible both to the patient and her family. Her cure was accomplished in less than three weeks; for, dreading the sudden stopping of so great a discharge and so much cutaneous irritation, I proceeded cautiously, and, towards the end of the cure, when she returned home, I directed an issue to be inserted in her arm, as a measure of precaution. She has continued well up to the present time (11th April, 1852).

"In this patient we were at first obliged to reapply the gutta-percha every second day, as it was rapidly detached and broken up into large flakes by the discharge from the subjacent surface. Its healing influence, however, speedily

diminished the diseased secretion, and then the artificial cuticle remained longer adherent, and it was not necessary so often to use the scissors for the purpose of cutting off the loose portions of gutta-percha membrane previously to applying a fresh layer. I ought to have remarked that the camel's-hair brush should be plunged, the moment it has been used, into hot water, to prevent it from being consolidated by the coagulated gutta-percha.

"This case caused a great sensation among my patient's friends and relatives, and many were the inquiries made relative to my method of cure. I must confess that my own astonishment at the result was not less than theirs.

"Since that time I have repeatedly used this application in *acne of the face*, in which disease each of the pimples should be covered with the solution, and the patient enjoined not to rub off the pellicle by washing, &c.

"In some, this treatment alone causes a material and rapid diminution of this tormenting eruption; and, by perseverance in this plan, there is every appearance in two of my patients that the tendency to throw out the pimples is gradually ceasing.

"Finally, in several cases of psoriasis, I have applied this solution with great benefit. In this disease, much care must be taken to prevent the application being rubbed off by the clothes, and no woollen stockings or rough garment of any sort should be allowed next the skin. I had the satisfaction of curing in a fortnight a chronic psoriasis of the back of the hands and arms in a lady, who had been under homœopathic treatment for six months, without deriving the least advantage from the infinitesimal doses prescribed by the practitioner.

* * * * *

"My anticipation respecting the utility of an artificial cuticle applied over the parts affected by commencing erysipelas has, I find, been verified, as appears from the following paragraph, taken from Dr. Neligan's able *Treatise on Diseases of the Skin*:—¹

"Acting as an impermeable varnish, and probably producing some effect, also, by the compression it causes, collodion has been successfully employed by Spengler and Rapp, as a local application in erysipelas. The parts are thickly coated with it by means of a camel's-hair pencil; and it is renewed as often as may be required, in consequence of its cracking and peeling off when dry."

"When my friend Dr. Stokes heard of my success in other cases, he resolved to try the gutta-percha solution in smallpox, and it gives me great pleasure to say, the result of two trials is most encouraging, and leads us to hope that at length the means of preventing the formation of disfiguring scars on the face in that disease has been discovered."

* * * * *

"In communicating these cases, Dr. Stokes observed, as worthy of notice, and probably connected with the beneficial result produced, that the most remarkable effect of the gutta-percha was to keep the face constantly moist, and to prevent the formation of hard, irritating crusts. He also mentioned to me a singular illustration of the effects of total exclusion of air from the cutaneous surface, as a preventive of the eruption in smallpox. It was that of a man, who, while in the Heath Hospital, for a scrofulous enlargement of the knee-joint, was attacked with this disease; the knee had been previously tightly strapped with adhesive plaster, and on the disappearance of the eruption, it was seen, on removing the strapping, that not a single pustule had been developed on the parts which were thus covered.

* * * * *

"I shall conclude with observing that, in psoriasis and other chronic cutaneous complaints unattended with any constitutional derangement, it is of the greatest consequence to check the growth of each new spot. This the gutta-

¹ Page 48.

² It is of great importance, and essential to the success of Dr. Stokes' treatment, to observe that the gutta-percha solution should not be applied to the face until the pustules are fully matured, or even begin to exhibit the first appearance of collapse, as indicated by the well-known central depression on the apex. Applied then, the solution is of the greatest service; applied before maturation, it is mischievous.

percha does most effectually in psoriasis, and when applied daily to any recent points of irritation, it smothers, as it were, each nascent centre of future blotches."—*Dublin Quarterly Journ. of Med. Sci.* June, 1852.

29. *Chlorate of Potash in Ulcerative Stomatitis and Cancrum Oris.*—Dr. J. H. BAINBRIDGE states (*Dublin Quarterly Journal*, Feb. 1853) that, in an epidemic of ulcerative stomatitis which occurred in the Coleraine Union Workhouse, in 1849, he used the chlorate of potash with great success. The treatment adopted was a mild aperient of rhubarb and magnesia, and the administration of chlorate of potash, dissolved in water, sweetened with syrup, in doses of four grains every fourth hour; the mouth was also washed with a weak lotion of solution of chloride of soda. They all recovered in about six days. Dr. B. treated one case with alteratives and tonics, and it was three weeks before it got quite well; thereby proving the efficacy of the chlorate of potash.

30. *Delirium Tremens treated by the Internal Administration of Chloroform.*—Dr. JAMES F. DUNCAN records (*Dublin Medical Press*, February 16, 1853) a case of delirium tremens successfully treated by the internal administration of chloroform, as first recommended by our correspondent, Dr. Pratt, of Baltimore.

31. *Suppurative Derivation as a Therapeutic Agent.*—Dr. HUGHES WILLSHIRE, in a very interesting paper on this subject, read before the Medical Society, London (Dec. 11, 1852), expressed his belief that the use of setons, issues, &c., was not only far less than formerly, but far less than it ought to be, considering the undoubted value of these agents in the alleviation of many disorders. He then passed in review those circumstances which led to the belief that very considerable effect may be exerted upon the deeper-seated tissues, &c., of the body, and consequently upon the functional and lesional aberrations constituting many internal disorders, by natural or artificial derivation to the surface of the frame. It was then shown how, in early periods of the medical art, and in times not long before our own, this belief was practically acted upon, and the important share that "suppurative derivation" was made to assume as a therapeutic agent. Its employment, however, he considered, was getting greatly out of fashion, and he thought that the introduction of anæsthetic agents tended to diminish still further its use, as both the public and the profession were of course the more and more inclined to the adoption alone of what he might term "a painless therapeutic." The author then alluded to several important maladies, in which he regarded the use of setons, issues, &c., as often of very great avail. He particularly mentioned phthisis, in its early stages; epilepsy, in certain of its forms; hypertrophy of the brain, with chronic cerebral congestion in children, &c. Of course, "suppurative derivation," in whatever form induced, could have but slight effect over general systemic aberrations from health, dyscrasies, cachexies, and so on; but he considered that it often excited a very powerful one over the local stasis, &c., in the minute vessels and tissues of visceral and deep-seated parts. In these, the systemic affection often made known its first and sometimes most severe recognizable "manifestations," and which of themselves reacted detrimentally, even fatally, in a sort of reflex way, as it were, upon the frame. At any rate, whatever views might be adopted as to the *modus operandi* of the form of treatment he was discussing, he believed that, practically, it would be found, under its appropriate indications, to be one of those valuable and effective methods of palliation or cure we should not so willingly allow to be forgotten, as we are doing in the progress we are making in some of the departments of clinical medicine. After a pretty full consideration of the physiologic and other reasons for our trust in it, and its practical illustration by references to cases so treated, the author concluded his paper with some remarks on what he designated as the "minor surgery of the matter."—*Lancet*, Dec. 18, 1852.

32. *Electrified Oxygen, or Ozone, in the Treatment of Albuminuria.*—At the meeting of the Academy of Sciences in Paris, on January 17, M. ROUX made a communication, with the view of showing that electrified oxygen, or ozone,

mixed with air, might be of advantage in the treatment of albuminuria, by favouring combustion.

The author said that, at the time when his researches and those of others showed the extreme importance of slow combustion in the maintenance of the vital phenomena, other experiments had pointed out ozone as much more appropriate for maintaining combustion than oxygen obtained by the ordinary chemical processes. Hence ozone, either pure or mixed with air, would be a valuable agent in cases of asphyxia, in scrofula, in cases of poisoning in general, and in all circumstances where it is either desired to support the powers or to stimulate combustion when reduced below its normal standard, or especially as a reanimating agent in cases where air and ordinary oxygen are found of no service.

Electrified oxygen is easily obtained by the decomposition of water by the galvanic pile. It may be mixed with air, by causing a current to flow into the tube through which the oxygen is inhaled.

Two birds were rendered insensible; one was then introduced into ordinary oxygen, the other into pure ozone. The one which was introduced into the ozone recovered more rapidly, but manifested much agitation; while the other recovered quietly.—*Association Medical Journal*, Jan. 28, 1853.

33. *Therapeutic Uses of the Bark, Leaves, Seeds, and Root of the common Ash (Fraxinus Excelsior).*—In a work recently published by Dr. OTTERBOURG,¹ some interesting remarks are made upon the use of the *leaves* of the ash in gout and rheumatism. It appears, that since these leaves were introduced into the *ateria medica* of Germany in 1841, by Rademacher, they have enjoyed a very considerable reputation for remedial powers in the diseases just named. Apparently in ignorance of the therapeutic reputation which ash leaves had obtained in Germany, two French physicians, Drs. Pouget and Peyraud, published a paper in the *Union Médicale* for Nov. 27, 1852, in which they detail various cases of gout and rheumatism cured by the ash-leaves; and among the cases of gout described is that of one of the authors, Dr. Peyraud. The value of the *bark* of the ash is of older date, and is better known. A few remarks, founded upon the works referred to, and upon information gleaned from other sources, may be useful to many of our readers, who, in hospitals, dispensary, or union practice, may be often glad to be able to substitute cheap and indigenous remedies for costly drugs, whenever equal advantages can be obtained from the former.

The bark of the *fraxinus excelsior* is bitter and astringent. Its febrifuge action is undoubted; and, so long ago as 1712, it received the name of European cinchona. It has been employed in the form of tincture, decoction, infusion, and powder. The dose is rather larger than of the corresponding preparations of cinchona. The infusion is as good a form as can be adopted. We may remark that the retail price of the bark, in Covent Garden Market, is two-pence per ounce.

The leaves are said by some to be purgative; by others, they are declared to have no such effect. From their general similarity of appearance, they are sometimes substituted by the druggist for senna leaves. The London seed-vendors generally have a supply of ash-leaves, but they inform us that they are seldom asked for, and that they do not know the therapeutic virtues on account of which their customers purchase them. We believe that an investigation of the medicinal properties of ash-leaves would, if properly conducted, yield some useful results; for, in various parts of this and other countries, they now are and long have been used successfully in various traditional nostrums.

In 1842, Dr. Peyraud had his first attack of gout, which was severe, and lasted for twenty-five days. During the three following years, the attacks increased in frequency and severity. Having derived little benefit from the remedial means which he had resorted to, he listened to the suggestion of one of his patients, an inhabitant of the department of Dordogne in France, who advised him to try an infusion of ash-leaves, informing him, at the same time,

¹ *Aperçu Historique sur la Médecine Contemporaine de l'Allemagne.* Paris, 1852.

that his forefathers had been cured by this prescription, and that many of the country people got rid of "their pains" by employing it. Dr. Peyraud took the infusion of ash-leaves, and from 1845 to 1849 had no fit of gout. He then had an attack, which yielded in five days to the infusion of ash-leaves, used under the observation of Dr. Pouget. These circumstances recalled to the recollection of Dr. Pouget a fact which he might otherwise never again have considered. It was this: that when he was a physician at Sorèze, in 1824, the peasants of that place had spoken to him of the great power which an infusion of ash-leaves had in driving away pains. He afterwards discovered that it had been used forty years ago as a gout specific by the peasants of Auvergne.

A commercial traveller, who had been gouty for twenty years, and had saturated himself with the syrup of Bouée and other vaunted specifics, consulted Dr. Pouget. At this time he was an almost constant prisoner in his room with successive attacks. After eleven days' use of the infusion, he was able to walk two kilomètres (one and a quarter English mile); in fifteen days he resumed his journey, and was able to travel without suffering, by diligence, from Bordenx to Quimper.

Several other cases are detailed, some of them acute, and others chronic. Articular rheumatism, in numerous instances, was also benefited by the infusion of ash-leaves.

Drs. Pouget and Peyraud thus sum up their opinions as to its efficacy and mode of administration:—

"The powder (infused) of ash-leaves is perhaps a true specific for gout and rheumatism; combining with the most powerful curative action, the immense advantage of giving rise to no dangers nor inconveniences, such as result from the use of colchicum. Having no purgative properties, it may be taken in any condition of the digestive canal. It causes neither nausea, sickness, general discomfort, nor depression. Experience enables us to state, that generally, under its use, at the end of four or five days, and sometimes sooner, the pain, redness, and swelling have sensibly diminished in intensity, or have even disappeared."

The method of administration is thus minutely described:—

1. Each dose of the powdered leaves ought to be infused for three hours in boiling water.

2. Before this infusion is taken, it requires to be sweetened to taste, and strained through a linen cloth.

3. In acute gout, and especially at the commencement of the attack (whether with or without fever), two doses of the powder ought to be infused in three cups of water; one to be taken at bedtime; the second, early in the morning; and the third between breakfast and dinner. The medicine, in diminished doses, requires to be continued for eight days after the symptoms have disappeared.

4. In chronic gout, a cup of infusion ought to be taken night and morning, for a long period. Fits of gout may be more or less indefinitely postponed by having recourse to this treatment, say for eight or ten days in every month.

5. In acute rheumatism, the infusion greatly assists the action of other medicines which are commonly used; and it is particularly beneficial in removing articular swellings. It produces equally good results in chronic rheumatism, whether articular, muscular, or nervous.

6. During the use of the remedy, it is not necessary in any way to change the mode of living, nor to adopt any special regimen, so long as the laws of sound hygienics are observed.

Speaking of the dose and method of administration, Dr. Ottorbourg says: "Several times during the day, thirty-two grammes of ash-leaves may be taken, infused in a sufficient quantity of hot water. In muscular pains, and in rheumatism of the scalp, this is an excellent means of cure."

From various works, we have gleaned the following notes regarding the bark, leaves, seeds, and root.

Pliny ascribes numerous medicinal virtues to ash-leaves, and speaks of them as a specific for the bites of serpents (lib. vii. c. 13). Bouregard, a surgeon of Rochelle (*Anc. Journ. de Méd.* vi. 233), and others, have cited cases from their

own practice in corroboration of this statement. Willich and others speak of the tonic properties of ash-leaves. Pélétin and Gilibert recommend them in scrofula. Tablet, in 1711, declared them to be equally purgative as senna leaves, but less liable to cause griping. Coste and Willenot found them less aperient than senna leaves, one-third more being required as a dose. They state, that the evacuations were sooner completed, and that, along with their purgative properties, they have a diuretic action. Hooper, in his *Medical Dictionary*, has the following notice: "The bark, when fresh, has a moderately strong bitterish taste. It possesses resolvent and diuretic qualities, and has been successfully administered in the cure of intermittents. The seeds are occasionally exhibited as diuretics, in the dose of a drachm." The vermifuge action of the bark is mentioned by several authors, and Bergius says, "Sunt qui multum sperant de cortice fraxini, in lacte vel aqua cocto, adversus vermes, atque etiam contendunt, hunc corticem sepe vermes pepulisse, ubi alia fefellerunt." (*Tome ii. p. 832. Stockholm, 1778.*) According to Martin-Solon, the decoction of the root is purgative and emetic. (*Bul. Gén. de Thérap. i. 163.*) Mérat and De Lens, in the *Dict. de Matière Médicale*, give the fullest notice which we have seen of the medicinal properties of the different parts of the ash. At the end of their article, the following authorities are cited: Schroer (J. C.) *Description du Frêne avec l'Énumération de ses Propriétés Médicales* (en Allemand), etc. Francfort-sur-l'Oder: 1700, in 8. Helvig (G.) *Diss. de Quinquina Europæorum, sive Cortice Fraxini*. Grypswaldia: 1712, in 4. Schreger (B. N. G.) *Diss. de Cortice Fraxini Excelsioris Naturæ et Viribus Medicis*. Lipsiæ: 1794, in 4. There is no reference to fraxinus excelsior in Woodville's *Medical Botany*; and Decandolle, Richard, Stephenson, Churchill, DuRoi, and Pereira, make no mention of its medicinal properties.

Additional information is obviously required regarding the medicinal properties of the bark and leaves of the common ash. Can any of our readers contribute towards supplying this deficiency? Under certain circumstances, the leaves, it appears, are purgative, and in others astringent; this, and various points connected with the physiological effects produced on different organs, evidently demand experimental elucidation. The discrepancy of opinion among observers may be explained by the experiments having been made with leaves gathered at different seasons. Mérat (*Dict. de Mat. Méd.*) advises that the leaves be gathered when in full vigour, and carefully dried for winter use; but in summer they may be used green.—*Assoc. Med. Journ.* Jan. 7, 1853.

34. *On Tympanitis as a Special Symptom of Disease.*—Dr. HENRY KENNEDY read a paper on this subject before the Dublin Obstetrical Society. He divided the subject into the acute and chronic forms; and detailed a case of the latter occurring in a man, where a tumour in the abdomen from this cause was supposed to arise from organic disease. This tumour suddenly disappeared while the patient was in a bath.

He then entered at some length into the consideration of what he termed acute tympanitis, and showed that the presence of this sign, which could be so easily detected, was of much consequence in the treatment of all those diseases in which it occurred. Dr. Kennedy especially alluded to fever, erysipelas, diffuse inflammation, and puerperal fever; and at some length he proved that when it occurred in any one of these diseases, the proper line of treatment was the stimulant plan, to the exclusion of all bloodletting, and even mercury. In conclusion, he drew attention to a recent paper in *Guy's Hospital Reports*, where a series of fatal cases of puerperal fever were given, and in every one of which no other treatment but local bleedings with calomel and opium was used. He thought this sameness of treatment was one which might very fairly be called in question, and the results in the cases given spoke for themselves.—*Dublin Quarterly Journal*, February, 1853.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. *The Particulars of two Cases of Popliteal Aneurism treated by Compression, with some General Observations on that Plan of Treatment.*—By BENJAMIN PHILLIPS, F.R.S., Surgeon to the Westminster Hospital.—[It is well known to our readers that the treatment of aneurism by compression has been strongly advocated by the ablest surgeons in Dublin, while Mr. Syme and some of his contemporaries of Edinburgh denounce it, and claim superiority for the ligature. The London surgeons, though tardy in trying compression, seem to have become favourable to it; and since their attention was particularly drawn to it by Mr. Bellingham, during his visit to London last year, they have been induced to make more frequent trials of it. The following interesting cases, read before the Royal Medico-Chirurgical Society of London (Jan. 11), with the discussion to which it gave rise, will show the present state of opinion in London in regard to the subject. Though the report is a long one, the importance of the subject, we conceive, justifies our giving it entire.]

The author states that his objects in laying this paper before the Society are to procure a permanent record of perhaps a unique case—one of popliteal aneurism on each side in a female—and to obtain a deliberate consideration by the Society of the treatment of aneurism by compression. As a proof of the necessity for further deliberation on this subject, he refers to the different estimate of the general applicability of the remedy in Dublin, London, and Edinburgh. The author alludes to the want of some tribunal before which important questions should be brought and discussed, as is done in the Academy of Medicine at Paris, where a subject such as the present would be referred to a committee to report upon, and a discussion would take place on the report.

CASE I. Catherine C—, aged thirty-nine, a market-woman, tall and gaunt, was admitted into the Westminster Hospital on December 3, 1851, with a pulsating tumour in the right popliteal space. She had observed a stiffness about the right knee about two months before admission. She followed her occupation, and carried heavy loads on her head; but gradually the part became more painful, especially after her day's work. Three weeks before her admission, in getting into a cart the limb was stretched, and she felt something give way in the ham. The pain suddenly increased, and in two days extended to the ankle. Her habits of life were unfavourable; she was a confirmed gin-drinker, and she laboured under great nervous excitement and apprehension. The heart's action was most tumultuous, but no signs of disease could be detected along the course of the large internal vessels. There was a pulsating tumour in each popliteal space. That on the right side commenced in Hunter's canal, a little above the point where the artery enters into the popliteal space, and extended beyond the middle of that space. It could not be emptied by any amount of pressure. The tumour on the left side was situated lower down in the popliteal space; was smaller, and with less violent pulsation. The treatment was at first directed to her general condition: it consisted of a moderate diet, with abstinence from fluids; ice and ice-cold water were applied to the tumour. Under this plan she improved; and at the end of a fortnight it was determined to try the effects of moderate pressure on the side of the larger tumour. From her alarm at the sight of an instrument invented by the author, it was thought prudent to commence proceedings by means of a simple ring tourniquet, the pad being fixed near the apex of Scarpa's triangle. It was screwed tight enough to cause the pulsations to become imperceptible to the touch. At the end of two hours, the pain was so great that it became necessary to remove the pressure; and in place of the tourniquet a Signorini's compressor was applied at the groin. It slipped, however, after nearly three hours, but was reapplied for the night; but in the morning it was found to have slipped again. During the day and night, moderate pressure was kept up by means of the ring-tourniquet, the situation of which was altered from time to time, and this was continued during the suc-

ceeding day. The pulsation of the tumour had evidently lessened, the knee looked shining, and the leg was slightly cedematous. During the night, the author's compressor was used. Pressure was continued during the following day and night; the ring-tourniquet was used, and with slight intervals the pressure was continued for seven days longer, when the tumour was carefully examined; it felt more solid, and no whiz could be detected when all pressure was removed. The pressure was more or less steadily applied for twelve days more. At this time there was more fulness about the knee and ham; no whiz could be heard; but there was a general elevation of the mass, synchronous with the heart. After two days' interval, pressure was again applied, and continued at intervals for eleven days. It was believed, however, that the treatment had failed, and that the aneurism had become diffused; and, as a last chance, ligature was applied. She died on the seventeenth day after the operation; and, on examination, a clot was found extending from the ligature to the aneurism. The posterior ligament of the knee-joint was ulcerated, and the cavity of the joint contained sanguineo-purulent fluid. The aneurism in the left side appeared to consist of a fusiform dilatation of the artery, and contained concentric laminae of coagulated blood. There was a large aortic aneurism commencing below the origin of the celiac axis. The aorta, and many other arteries, presented extensive fatty degeneration.

CASE II. George S—, aged thirty-one, a navigator, admitted July 8, with a popliteal aneurism of the size of a turkey's egg. It had begun six months before, from a strain. Six weeks after this, he observed a "knot" in the bend of the knee, which gradually increased to its present size. His health is good, and the circulating system tranquil. The characters of aneurism were very marked, and when firm pressure was applied on the artery, at the groin, the tumour disappeared. It was found that he had been treated by compression at the Reading Hospital, and the author was furnished with particulars of the case by Mr. Bulley; from which it appeared that pressure was applied for three weeks, by which the tumour became less, and lost its elastic feel. It was noticed that at night, when the pressure was entirely removed, the pulsation ceased; but that when it was reapplied the pulsation returned. Obstructive pressure was now applied for some time, but the man became impatient, and refused to allow any treatment. He was consequently discharged.

Although it appeared that a fair trial had been made, yet the author was induced to repeat the compression, and Dr. Carte saw the case, and aided the author with his instrument. The author here proceeds to describe the instrument. It was applied the 14th of July, and no pulsation could be detected in the tumour, which was completely emptied. The kind of pressure was varied, as well as the situation. In three days, it was noticed that the tumour could no longer be emptied, and that it contained coagula. The pressure was now continued; and, on the ninth day, the tumour was quite firm, and there was no pulsation in it. Since that time he has remained quite well.

After commenting on the different effects noticed at the Reading Hospital, and under his own treatment, the author adverts to the fact that authorities are still found in opposition to the treatment of aneurism by compression. It must, however, be judged of by its results; and if it be shown that more cases are cured by it than by ligature, it will ultimately be preferred. Mr. Syme's statement that he has tied the femoral twenty times without bad results, does not agree with the experience of this operation in the hands of others; and it appears, by reference to cases, that the failures amount to between one-third and one-fourth of the whole. The treatment by compression is far more favourable, its failures not exceeding one-fifth of the whole; and even when it fails the patient's life may be saved. The question, whether there are any objections to this mode of treatment so serious as to make the surgeon hesitate to employ it, is answered by the author in the negative; and he objects to Mr. Syme's description of the time employed and the pain to be endured under it, as not a fair statement of the case. He admits that cases have occurred where great suffering has attended the treatment by compression, but conceives that this is unnecessary, and is not the common result. It originated in a mistaken notion that it was necessary to stop the current of blood entirely, in order to effect a

cure. Mr. Todd did not think excessive pressure necessary; but those who followed him for some time acted on the opinion that what the ligature does must be done by compression. But it has been proved that an aneurism may be cured although the whole supply of blood be not completely cut off, even when the ligature has been used. The author maintains, then, that the surgeon is justified in adjusting the pressure to the enduring powers of the patient, rather than to the almost complete extinction of pulsation in the sac, provided the pressure be sufficient to produce a decided diminution in the force of the pulsation. As to the most eligible point for applying the pressure, he thinks it should be where it can be best borne, and where it occasions the smallest amount of inconvenience; and he does not think it of consequence that the pressure should be applied above the profunda. It is important, however, that the return of blood by the veins should be as little as possible interfered with, and for this reason he believes that the immediate neighbourhood of Poupart's ligament is the most desirable situation, while, at the same time, a smaller amount of pressure is necessary at that point. The author maintains that the pressure should be applied gradually, and not suddenly, so as to admit of the enlargement of the collateral vessels; and he thinks it is clearly established that continuous pressure is not absolutely necessary. The author sums up by saying that he is justified in asserting that pressure should be applied at points where it can be best borne, provided it be not too far removed from the sac; that, if possible, it should be so applied as not to prevent the return of venous blood; that it should be strong enough to produce a sensible influence on the strength of the pulsation in the tumour; and that it may be intermitted to a sufficient extent to make the treatment tolerable to the patient.

36. *Case of Popliteal Aneurism cured by Compression of the Femoral Artery at its Upper Third.*—By J. Mosso, M.D., Battalion Surgeon, Coldstream Guards. —This case, the author observes, is interesting from the fact which it proves, that a smaller amount of pressure than was formerly thought necessary will suffice for the cure of the disease. This being established, the chief difficulty in the steady application of pressure, the pain caused by it, is much lessened, the effects resulting from the undeveloped state of the anastomosing vessels are avoided, and a safer plan of treatment pursued, more especially when the tendency to arterial disease elsewhere in these cases is considered.

Drummer W. K.—, aged twenty-three, of a spare and delicate habit of body, walked to the hospital on the 19th April, 1852. He complained of severe pain in the calf of the left leg, which was swollen, and the veins were dilated. Five days before, while playing at cricket, he was suddenly seized with pain, which obliged him to desist. He imagined he had met with a sprain. Although still suffering, he continued his duty; but to-day, being unable to go on any longer, he had come to the hospital. A large tumour, pulsating synchronously with the heart, was found to occupy the popliteal space. It was partially emptied by pressure, and returned to its former dimensions when that was removed. It expanded in every direction, and the bellows sound was heard. No other disease of the femoral or other artery was detected. The chest was free from disease, and the heart's action regular. He had suffered from time to time from slight catarrh and febrile attacks. He had been treated five times for venereal sores, but on one occasion only had taken mercury, and then but for ten or twelve days. After a little preparatory treatment, Mr. Phillips's instrument was applied, at first over the brim of the pelvis. The pressure could be borne only an hour and a half; it caused severe pain and feverishness. Believing that this arose in great measure from nervousness, the author employed manual pressure a little below the origin of the profunda. This was effected by the aid of several intelligent convalescents. The artery was compressed only to such a degree as to allow a feeble pulsation in the sac. For the first three days, this plan was followed for eight hours only during the day. The patient did not complain at all. There was no feverishness, nor increased œdema of the leg. The clamp tourniquet was now employed, but was removed each night; finding that it was well borne, it was kept on at night also from the 26th. On the 3d of May, the sac had become harder and smaller, the

articular arteries more developed, and the œdema of the calf less. On the 6th, the sac ceased to pulsate, and the tourniquet was removed. From this date the absorption of the contents of the sac went on rapidly, and he began to regain the use of his limb. In a short time, the measurement round the limb diminished from sixteen inches and a quarter to fourteen inches and one-third; the femoral artery was pervious. On the 2d July, he was dismissed to his duty, which he continued to do well till the beginning of November. Before that time his general health seemed worse. On the 19th November, he was again admitted, and an aneurism of the aorta was found near the cœliac axis. He complained of great pain in the loins and abdomen, coldness and numbness of the legs, faintness and nausea. On the 9th December, he seemed to be fast sinking, and died on the following day.

On *post-mortem* examination, the heart was found of usual size—somewhat flabby on the right side, but the texture sound; valves healthy; no disease of lining membrane; the aorta sound to the situation of the cœliac axis, between which and the superior mesenteric a rupture of its coats was found, and openings communicating with a large sac, of recent formation, and filled with coagula. It had burst in two places, and several pounds of blood were found in the cavity of the abdomen. The aneurismal limb was injected; the femoral and popliteal arteries were of natural size and pervious, until opposite the centre of the popliteal space; femoral vein pervious and healthy; the profunda and its branches enlarged; slight thickening all that remained of the sac; popliteal artery obliterated down to its division into the tibial arteries; popliteal vein also obliterated; the anterior tibial artery enlarged; the posterior of usual size; the peroneal larger than usual; muscular branches large; the ramus anastomoticus magnus three times its usual size, its branches anastomosing with the inferior articular recurrent tibial, and with each other. Two superior articular: and an azygos, given off by a common trunk, just previous to the remains of the sac, anastomosed freely with the recurrent tibial and peroneal.

The recurrent tibial was as large as the radial, and anastomosed freely with the articulars and plexus in the peroneal nerve; a tortuous plexus in the substance of the popliteal and peroneal nerves, united below with a recurrent branch from the anterior and posterior tibial behind the head of the fibula; another branch from the azygos communicated with the recurrent branches behind the head of the fibula.

The communication between the external and internal articular was effected by branches three times their natural size; that between the anastomotic magna and inferior articular, between the recurrent tibial and superior articular by large branches.

37. *Discussion at the Royal Medical and Chirurgical Society relative to the Treatment of Aneurism by Pressure.*—The PRESIDENT, Mr. HODGSON, said that he quite agreed with Mr. Phillips in the opinion which he had expressed in his paper, that the treatment of aneurism by compression had not obtained that attention in England which its importance deserved, and which it had obtained in Ireland. The cause of this was probably the want of success which had followed this treatment in some cases in which it had been employed in this country; and the cause of this want of success he believed to have been a want of acquaintance with the true principles upon which this procedure produces the cure of the disease. It had been supposed that the pressure should be applied with sufficient force to place the sides of the artery at a distance from the disease in actual contact, so as to cause the obliteration of its cavity by the adhesive process, and thus to place it and the disease in the same condition as when a ligature is applied to an artery in the Hunterian operation for the cure of aneurism. Such, however, was not the case; for in four instances in which the parts had been examined after death, and in which aneurisms in the lower extremity had been cured by pressure—three of which he had had the opportunity of inspecting, it was found that the artery at the part to which the pressure had been applied exhibited no change from its normal condition. In these instances the artery, throughout its whole course to the seat of the aneurism, retained its natural caliber; there were no vestiges of inflammation in any

of its textures, nor in the surrounding parts; there was no adhesion of its sides, no plug, no contraction of its canal, and, in short, no appearance of its having been subjected to any kind of treatment. In some of these specimens, the aneurismal sac and the artery in the ham were filled with coagulum; in others, the sac only was filled with coagulum, and the circulation went on in the natural course of the artery. In Dr. Monro's case, which he had examined, the aneurism and the artery in the ham were obliterated; but above, where the pressure was applied, the artery was pervious and quite in its healthy condition. It was clear, therefore, from these facts, that the cure was not effected, at least in these instances, by producing adhesion between its sides and obliteration of the artery at the point where the pressure was applied. By what process, then, did compression cause the cure of the disease as effectually as the ligature of the vessel at a distance from the aneurism? From the recorded cases, especially from that communicated this evening by Dr. Monro, it was evident that moderate, but not "obstructive pressure," was that which was required. How did this act upon the artery? In addition to the three proper coats, which formerly were regarded as constituting an artery, modern histologists have demonstrated another texture, composing the inner portion of the middle or elastic coat, and, of course, situated between this elastic and the inner coats. In this texture resides the vital contractility of the vessel. Now, it appears that when an artery is subjected to any irritation, this vital contractility is brought into action. When an artery is torn, or violently stretched and elongated, or exposed to a chemical irritant, it is by the agency of this vital contractility that its caliber is diminished; and in extreme cases this sometimes happens to such an extent that its area even becomes completely closed. Compression is one of the agents by which this power may be brought into action, and he believed that it was in this manner that long-continued moderate pressure produced such a diminution in the volume of the stream passing through the main artery to the disease, if not the entire suppression of the current, as to cause those changes to take place in the aneurismal sac by which the cure of aneurism is effected, when a ligature is applied at a distance from the tumour. In his opinion, it was very important to keep this principle in view in adopting the means of treatment by compression; because, by a moderate degree of long-continued pressure, we should produce all the good effects required, whilst great pressure would produce great suffering, which could be borne, if at all, with extreme difficulty, and often with most injurious effects upon the parts to which it is applied. Ample experience had now proved that long-continued moderate pressure was all that was required to bring about the cure of the disease, and not such a degree of violent pressure as would mechanically prevent the flow of blood through the vessel. The latter idea had, he believed, caused the failure of this practice in many instances in which it had been employed; whilst in others, by causing sloughing, and inflammation, and obstruction in the great venous trunks, and serious engorgement of the limb, its continuance was from necessity abandoned. Many years ago, he had been engaged in some experiments on animals, in which attempts were made to procure the obliteration of arteries by powerful local pressure. In very few instances could this be accomplished; the sufferings which it produced were excessive, and generally it caused inflammation of the veins, and most injurious effects upon the surrounding parts. The President concluded by expressing a hope that some of the gentlemen present would give their views on the subject of compression.

Mr. FERGUSON, after a pause, rose and said that the circumstance of no one rising to address the meeting could not be from any want of interest in the subject, and he regretted that an older fellow than himself did not take the lead. He thought it a pity that so important a question should for the second time be passed over almost in silence in that Society, particularly after the interesting papers which had been read on the subject. The subject of compression in the treatment of aneurism was now attracting attention over the civilized world; and the surgeons in Dublin, Edinburgh, and elsewhere, where the plan had attracted much attention, naturally looked with some anxiety to what might fall from fellows of that Society upon the subject. He thought the surgeons present ought to give their opinion upon it. He (Mr. Ferguson) begged

leave to say that he accorded with the views of the Dublin surgeons in advocating the employment of pressure in such a way that, if it were general, would soon save any necessity for discussion upon it; for they not only brought forward arguments in its favour, but proofs, sufficient, in his opinion, to settle the matter. Thus, forty or fifty cases had been recorded by the well-known names of Tuffnell, Bellingham, &c., out of which only three or four had been unsuccessful. Now, in noticing the treatment of aneurism by ligature lately, he had occasion to state that, out of one hundred cases, sixteen had gone wrong. This fact alone was sufficient to show that compression should occupy the attention of every surgeon. In his opinion, the propriety of the operation, with respect to the lower extremity, was settled; but its applicability to the upper extremity involved a different question, for we could not apply compression there with the facility with which we could in the lower limbs. He thought Mr. Phillips and Dr. Monro entitled to something more than the usual form of thanks of the Society for their communications. It was worthy of note that, in Dr. Monro's case, pressure was kept up, under the surgeon's care, by that best of all compressors, the hand, for the space of three days; and this, he had no doubt, had had much influence on the favourable termination of the case. From his own (Mr. Fergusson's) experience of compression, and from the history of cases, he believed that both surgeons and patients were apt to despair too soon, and at a time when they should be full of hope and confidence. In one case, recorded by Mr. Phillips, this was well illustrated, Mr. Phillips having persevered with success, after another surgeon had given up the case in despair. He (Mr. Fergusson) had seen a case which had been under treatment for nine weeks, without apparently making any progress whatever; but symptoms of cure soon after manifested themselves, and success was ultimately complete. Mr. Hodgson had, in his remarks, raised one or two nice points for discussion. One was a suggestion thrown out with respect to pressure on the contractile coat of the artery. Now, without denying the influence claimed for it by so distinguished an authority as the President, he (Mr. Fergusson) should fancy that more depended really upon the pressure itself than on the influence of the contractile coat. Now, pressure would obstruct the current of blood about one-third, more or less; yet the pulsations would continue; that amount of pressure quieted the circulation, and to this more than to anything else he attributed the cure. In calling to mind some points in Dr. Monro's case, he recollected that the caliber of the artery, from the upper part of the superficial femoral to the popliteal, was fully as great as in health. This was a fact in favour of the cure being effected by pressure only. Another proof was the circumstance that all the compression necessary was that which would impede, but not completely obstruct the circulation. The same thing might take place in respect to a ligature, and it was only due to Mr. Wardrop to say that he had been the first to show that it was not necessary to entirely obstruct the circulation through the aneurism, but only to diminish it to such an extent as would give rise to the deposition of fibrine.

Dr. J. A. Wilson said: "When, in cases of popliteal aneurism, long-continued pressure of the femoral artery has been successfully employed, I should hesitate to explain the diminution of caliber in the compressed vessel by the hypothesis of an increased contractile energy in the artery at the part where compression has been made. I am inclined to consider such result as the effect of an impaired state of the general nutrition and special function of the arterial tube, under the disturbing influence of the long-continued pressure. Under this process of artificial structure, the close, active normal relation of the artery with its contained blood is no longer maintained, and the consequences of such altered relation in the blood's current are of necessity first experienced in the aneurismal sac; subsequently, it may be in a prejudice and partial interruption of the circulation through the smaller arterial divisions of the limb. On this view of the effect of long-continued pressure of the healthy upper arterial structure, in bringing about obliteration of the aneurismal sac, or prevention of its further development, the blood-current in contact with the compressed vessel is considered only a secondary agent in the change. From such violent interference with the complicated arterial functions, an effect necessarily fol-

lows on the force and volume of the blood's current through the compressed tube, with, as I believe, an incipient prejudice to the composition and delicate contractile properties of the blood itself; yet, such effect, if I am not in error, proceeds, in the first instance, from impaired nutrition and diminished contractile energy of the artery, which, however healthy and efficient in its structure and function, deteriorates, as an organ, from the first application of force by pressure to its self-adjusting tubercular cavity." He inquired the condition of the cellular tissue in Dr. Monro's cases.

Dr. Monro replied that there was no thickening of the cellular tissue external to the artery, the sheath being quite pervious.

Mr. CURLING had seen compression tried in two cases, and had come to the conclusion that more depended on the instruments employed than many supposed, and that very great care and attention to the case were necessary. In one case, which had been successful, in the London Hospital, the cure was mainly attributable to the great attention which Mr. Ward had paid to the case. Unless well managed, excoriation and sloughing readily followed the application of the pressure. In one of the cases, he had seen the proceeding fail from this cause. Even with moderate and well-sustained pressure success would not always follow, particularly in instances of very stout persons. He related two cases in which, from disease of arteries, a ligature could not be applied, and compression arrested hemorrhage after amputation. He had seen one case in which pressure upon the brachial had been successfully employed.

No one else rising to address the Society, Mr. PHILLIPS said that, before the discussion closed, he wished to make two or three observations. The object he had in view in bringing the paper forward was to determine, as far as possible, the benefits to be derived from compression; and whether we could do away with some of the inconveniences and difficulties which at present attend its employment. He could not help expressing his regret that more of the experienced surgeons present had not given their opinions upon the subject, so that it might be stamped with its true worth. He should, however, take it for granted, in the absence of any counter-statement, that compression should be continued to be employed, as at present, until further experience enabled us to arrive at a better plan, if such there was. Now, it was clear that the operation succeeded in more cases than the ligature, and that a great number of successful cases had been published. It was open to the objection, however, of being more tedious, painful, and difficult to bear than that by deligation. Now, he had wished to raise the question whether compression, applied with great care and improvement, might not be freed from that objection. He (Mr. Phillips) had set it down that a moderate degree of pressure only was necessary, and that this might be sometimes intermitted. If pressure, with this qualification, were long enough continued, success would generally attend its application. A cure could not, of course, be expected in all cases. It had failed in one of the instances related in his paper, in which the artery had given way in front. The Dublin surgeons said the operation always failed in such cases, whether ligature or compression were the means employed. He (Mr. Phillips) did not know on what grounds they formed this opinion; but, in his own case, the joint had been injured by the arterial disease. But was it always so in these cases? These exceptional instances, however, did not militate against the value of the operation as a general remedy. He had, therefore, now come to the conclusion that the smallest amount of pressure which would interrupt the flow of blood through the artery, kept up for a sufficient length of time, with occasional intermissions, would be well borne, and would cure aneurism.—*Lancet*, Jan. 22 and 29, 1853.

38. *Popliteal Aneurism cured in a short time by Compression of the principal Arterial Trunk*.—William G. — aged fifty-seven years, and a carpenter by trade, was admitted, Nov. 15, 1852, into Luke ward, under the care of Mr. Cock. The patient has exerted himself as much as is usual in his calling, but never imposed more fatigue on the right leg than the left. He is of high stature, robust, has always enjoyed good health, and been particularly temperate in his habits. He is of a quiet, contented disposition, and possesses an average

amount of intelligence. The man is married, has many children, and does not remember having injured either leg in the slightest degree; nor did the affection ever exist in the family. Three months before admission, the patient's right thigh and leg pained him much for a few days, and he was under the impression that the pain was seated in the bone. This attack did not last long, and the patient soon thought no more of it, until one month afterwards, when he noticed a little lump in the popliteal space, of the size of a plum. Pulsations were then distinct, but much fainter than they subsequently became. No actual pain was experienced, but the tumour for the next two months became gradually larger, though the patient was never prevented from walking as usual, going even great distances without inconvenience.

On admission, the patient's state was the following: There is a strongly pulsating tumour, partly in the right popliteal space, and partly lower down towards the gastrocnemius muscle. The swelling begins above, in the popliteal space, opposite to the upper border of the patella and ends below, on a level with the tubercle of the tibia. The tumour is round, and about the size of a turkey's egg; it pulsates strongly, and presents, on auscultation, a strong bruit. The chest, on careful exploration, does not yield any evidence of thoracic aneurism. The tumour feels yielding and elastic, and the hand placed upon it receives a sensation as if the vessel were dilated more towards the inner than the outer side.

Mr. Cock, after considering all the symptoms of the case, and giving due regard to the constitution, health, temper, &c. of the patient, resolved to give compression a fair trial, and used a clamp lately modified by Mr. Biggs, to which the latter has given the name of "Biggs's aneurismal compressor." The instrument may be described as follows:—

A semicircle of steel, with anterior and posterior movable arms, the anterior containing the screw and pad to rest on the artery, the posterior holding the hinged cushion or splint, on which the limb is placed. When the instrument is applied, the pad is screwed down so as to *gently* compress the artery. The centre screw is then turned to direct the pad inwards, and fix the artery between it and the bone. The lower screw, placed beneath the cushion, raises the outer edge of the splint, and prevents the instrument moving in the slightest degree. The advantage of this instrument seemed to us to consist principally in giving the pad a direction inwards towards the bone and in completely securing the limb by a good broad splint, which may, by a screw placed beneath it, be brought in closer contact with the thigh.

Mr. Cock expressed himself greatly pleased with the manner in which this clamp acted all through the case.

The compression was begun Nov. 24, and regularly continued to Dec. 10, making just sixteen days. The pulsations ceased five days before the apparatus was completely left off; but it was thought advisable to continue the pressure, so as to insure the due establishment of the collateral circulation. The tumour was on the day of the patient's discharge (Dec. 22, 1852, thirty-seven days after admission) just half its original bulk, and presenting a great degree of hardness. The pressure was kept up with great regularity and patience during the whole of the above-mentioned period; the weight at the groin being substituted for the clamp when the latter was getting too irksome. The patient slept very little for a whole week, as he was anxious to keep up the pressure in the most exact manner; and he was fully rewarded for his close adherence to Mr. Cock's directions, by the speedy solidification of the sac and obliteration of the artery.

When the apparatus had been completely removed, the leg was tightly and evenly secured by a roller; and when the patient first attempted to walk, he felt the leg rather weak, but all pain in the limb had quite disappeared. He finally left the hospital Dec. 22, 1852, with the tumour quite solid, and the complete obliteration of the artery.

This is certainly a most satisfactory result of compression in the treatment of aneurism, and likely to make a lasting impression on all those surgeons who saw the case. Of course, the patient may be looked upon as a very favourable subject for this kind of treatment; but it is very likely that, even with nervous and irritable patients, a course of sedative medicines, and proper warning that

the success depends on perfect obedience and perseverance, would very probably have a beneficial effect, and facilitate the successful application of compression.—*Lancet*, Jan. 8, 1853.

39. *Case of large Axillary Aneurism, in which the Subclavian Artery was successfully Tied.*—BARNARD HOLT, Esq., read the following interesting case before the Royal Medical and Chirurgical Society (Jan. 25, 1853).

ROBERT H—, aged thirty, was admitted into the Westminster Hospital, May 23, 1851, with an axillary tumour, apparently fungoid. Five weeks previously he felt slight pain in the right axilla, and detected a small, hard, and apparently glandular swelling. He consulted Mr. James, of Uxbridge, who diagnosed the case to be abscess, and treated it accordingly. After a week, he was admitted into the Uxbridge Union, under the care of Mr. Rayner, who took a similar view of the case. The tumour had now increased, the patient complained of throbbing pain, and he had had two or three distinct rigors. Seven days after admission the tumour was much enlarged, and the skin discoloured; and these symptoms having increased, Mr. Rayner, at the solicitation of the patient, punctured the tumour with a lancet, when a small quantity of blood only escaped. A suspicion was now entertained that the case might be one of aneurism; but on consultation, as no further evidence in favour of this view existed, it was considered that the previous opinion was correct, and the treatment was continued. Five weeks after the appearance of the tumour, profuse hemorrhage took place, but ceased before Mr. Rayner arrived. He then thought he could detect a *bruit de soufflet*; and on this being confirmed, the patient was sent to the Westminster Hospital. At this time, the patient presented an exsanguious, unhealthy, and anxious aspect; tongue clean and moist; skin warm and perspiring; eyes glassy; pulse 96, and hard; appetite bad; bowels moderately regular. The swelling was about the size of an ostrich-egg, nodulated, and communicating a spongy feeling to the touch. No fluid could be detected, but there was the elastic feeling usually accompanying malignant disease. The pain was intense and lancinating. The hand and arm were oedematous, and could not be brought to the side; movement was difficult; no bruit or pulsation could be detected. A grooved needle was introduced, but only a small quantity of grumous blood escaped. Seven days after admission, the tumour was more dense, its elasticity was nearly gone; the arm was more oedematous, and the radial beat more feebly than on the opposite side. A fortnight afterwards, the tumour was greatly enlarged, was now uniform and elastic, and an indistinct bruit and pulsation could be detected. On consultation, it was agreed that the tumour was aneurismal. The bruit and pulsation had become more distinct, and it was decided that the operation of tying the subclavian artery should be performed. On the 18th of June, the day previous to the operation, the tumour had increased, the pulsations were uniform and distinct, and a moderately loud bruit could be heard all over the surface; the arm swollen, tense, and painful, widely separated from the side; the clavicle pushed upwards and backwards, so as to describe an obtuse angle with the sternum; the artery could be commanded by pressure above the clavicle. On the 19th, the patient being seated in a chair, the integument was drawn over the clavicle, and an incision made the whole length of and upon that done. The skin being now permitted to resume its original position, the incision, of between four and five inches in length, was situated immediately above the clavicle. The deep cervical fascia was cautiously divided to the same extent. On careful dissection of the cellular tissue, the brachial plexus was exposed. A branch being mistaken for the artery was raised on the needle, but as pressure on it did not command the circulation, the artery was again sought for, which was felt feebly beating under the plexus of nerves, which lay in front and covered it. A ligature was put round it, and the circulation completely commanded. The patient now suddenly became very faint, and his breathing embarrassed; he was laid on the floor, and water dashed on his face, when he soon recovered. No unfavourable symptoms ensued after the operation. On the 8th of July the ligature came away. At this time the tumour had decreased one-half, and a feeble pulsation could for the first time be detected in the radial

artery. A few days afterwards, the tumour was somewhat large, and as it did not again decrease, the diet was reduced and ice applied. From that time the tumour gradually diminished. On the 24th of December, the tumour was so far reduced as to admit of his return to the country; he could move his arm nearly as easily as the other, and the oedema had entirely subsided.

The author then remarks on the difficulties sometimes experienced in forming a correct diagnosis between fungoid and aneurismal tumours. In the present case the tumour had at first been taken for abscess; and it was not until the hemorrhage took place that its aneurismal character was suspected. When first seen by the author, the sac was again so distended as to mask the precursory signs; and the history and appearance of the tumour favoured the idea of its malignancy, which was, however, contradicted by the subsequent improvement in the health of the patient, and the slow increase in the tumour. The size was remarkable, measuring nine inches and a half from the clavicle to the centre of the axillary portion of the tumour, and five inches from the arm to the side of the chest. The surrounding structures were materially displaced, and the clavicle elevated, thus deepening the space between the integument and the artery, and apparently offering a serious obstacle to the facility of placing a ligature on it; indeed, when the parts had nearly resumed their normal relation, the cicatrix more resembled that arising from ligature of the carotid, than of the subclavian.—*Lancet*, Feb. 5, 1853.

40. *Suggestions for facilitating the Exposition of Arteries, and the Application of the Ligature.* By WM. HARGRAVE, Professor of Surgery in Royal College of Surgeons, Ireland, &c.—Some practitioners will consider it a useless question to ask, and a waste of letterpress to print, what is the best direction to be given to the incisions required for securing an artery? and, if possible, to lay down fixed principles for these operations. For some sessions past, in my lectures on operative surgery, I have always advocated and demonstrated to the class a different mode of proceeding from that laid down in books. Though so many works on surgery have issued of late from the press, this most important practical point seems to me not as yet definitively settled, as it is capable of being done, especially for the junior practitioner. The only author that I am aware of who has touched upon a change in this practice is Mr. Skey, which meets my full concurrence.

Most surgeons still cling to the rule of cutting parallel to the course of the artery, seldom or never deviating from it; and, if they do, act doubtfully and with hesitation.

From an attentive consideration of this most practical proceeding, I would lay it down as a rule that the incisions parallel to the artery generally should be the exception, while incisions transverse or oblique to the vessel should almost always be the rule. By the adoption of the latter, the surgeon will be able to find the vessel with more ease and certainty to himself, and to encircle it with the ligature with greater prospect of success to the well-doing of the operation.

I am well aware that I am not advocating a totally new proceeding in practice, as Scarpa, Dupuytren, and Guthrie have advised it in some instances; and I have performed such an operation on the left common carotid with every facility to myself. My colleague, Mr. Porter, has also occasionally deviated from this practice. This question can be best met by stating the disadvantages of making the incisions parallel to the artery: 1st. The slightest deviation from its course will lead the surgeon astray, going either to the external or to the internal side of the vessel; and unless he corrects his mistake on the instant, the operation will be tedious and unsatisfactory, calling for the use of retractors, and requiring excessive manipulations of the wound to find the vessel, and may even fail *in toto*, as has occurred more than once in practice. 2d. If two vessels happen to run parallel to each other, as often occurs in the arm, and sometimes below Poupart's ligament, more difficulty will attend their being exposed, and distinguished one from the other, than by the adoption of a different course to the incision. 3d. The operation does not appear to me to be facilitated by such a line of incision.

What advantages follow a transverse or oblique incision? 1st. No doubt exists but that the vessel will present itself in some part of the wound, and a retractor is seldom required. 2d. If two vessels run together, greater facility will attend the distinguishing of one from the other, and securing the artery which is the subject of the operation. 3d. It is an operation more generally fitted for the profession than the first one, as it does not require so much dexterity or great knowledge of anatomy. 4th. If much adipose substance exists, it will render the operation more satisfactory and certain.

It can be objected to the practice now advocated, that in some instances the muscles must be cut across. This matters but little; for, when the patient recovers, such are the compensating powers inherent in the animal economy, that no permanent injury will arise from such a lesion.

To enumerate the operations in which a transverse or oblique incision is valuable to expose an artery and to secure it, the following will prove its efficacy: 1st. The common carotid: it is only necessary to test this operation either on the dead or on the living, when the superiority of this practice will be admitted; and will permit the surgeon to insulate the artery in the readiest manner from the veins and nerves which run so close and parallel to it; in fact, a free gaping wound is the result of the section of the sterno-mastoid muscle, and all the parts at the fundus of the wound are visible; it is an operation well adapted for children,¹ and those with short necks. 2d. The occipital artery, where it is uncovered by the mastoid muscle, or in the posterior third of its course, is most readily laid bare by an incision transverse to its course, or parallel to the posterior edge of that muscle in its third stage. 3d. The external maxillary, as it passes over the ramus of the jaw, can be more readily exposed by an oblique incision than one that is made parallel to its course, and thus affords a ready facility for securing it. 4th. The lingual artery is also most effectively denuded by an incision oblique to its direction, which brings into view in their anatomical relations the digastric tendon, the lingual nerve, and then the artery; all three presenting nearly the same colour, but practically distinguished from each other by their never-varying relations. 5th. The subclavian, immediately above the clavicle, is exposed by the incision being oblique, if not transverse, to the direction of the vessel. 6th. By dividing the pectoralis major muscle across—i. e., from the clavicle to the axillary border in the course of the artery, one of the most valuable operations in surgery is given to the profession to secure this vessel, if wounded in any part of its course, from the clavicle to the axilla, and to tie it both above and below the injury. This valuable operation is an exception to the rules now laid down, being parallel to the course of the artery. 7th. An oblique incision for exposing the humeral artery will enable the surgeon more readily to find this vessel, and to distinguish between the frequent irregularities so often found in this portion of the vascular system, and which always greatly embarrass the operator. 8th. The same line of incision will facilitate the operations for the radial and ulnar arteries. 9th. The internal mammary, if it is considered advisable to secure it, will be most expeditiously laid bare by marking well the course of the artery and cutting parallel to the ribs in the intercostal space, and dividing the superimposed structures carefully, till the artery is exposed; this proceeding affords more ease in finding the vessel, and involves less risk of wounding the costal pleura than the operation proposed by M. Goyrand, which, from his directions, makes the incision run parallel to the course of the artery; if any deviation takes place, the artery is not easily found, and more danger is incurred in wounding the pleura costalis. (*Lancette Francaise*, 1834.) 10th. The facility with which the internal epigastric artery is exposed and secured by indicating its course, and dividing the coverings placed upon it, parallel to and above Poupart's ligament; or, in other words, transverse to the course of the vessel, leaves nothing to be desired in this operation. 11th. The external iliac, either by Abernethy's or Cooper's operation, is laid bare more or less transverse to its course; while the internal one is also similarly presented to the surgeon. 12th. The gluteal artery, as it lies external to the pelvic cavity, notwithstanding the

¹ See Quart. Journ. of Med. Sci. Aug. 1849, No. xv.

great coverings it has from such thick and powerful muscles as the gluteals, can be always laid bare by attention to the following rules, which I might say are founded upon the immutable formation of the osseous system: mark the distance between the posterior-inferior spine of the ilium, and the external surface of the great trochanter, the subject having been previously placed upon the abdominal surface, the inferior extremity extended and rotated outwards, divide this space into three equal parts; at the point where the inner third meets the commencement of the middle third, the artery will be found with mathematical accuracy. Next, as to the manner for exposing it; let this point be the centre of the incision, which is to be made transverse to the course of the muscles, when the artery will be found at a great depth in a space formed superiorly by the notch of the ilium, and subtended inferiorly by the pyriformis muscle; in this operation retractors are absolutely necessary. 13th. The common femoral, if considered advisable, can be exposed and secured with great facility immediately below Poupert's ligament by an incision parallel to it, when the artery can be insulated from the vein without any disturbance to it. My colleague in the School of Surgery, Mr. Porter, has performed this operation, and reports very favourably of the facility afforded by it. 14th. Superficial femoral artery: a certain obliquity to the incision for securing this artery in the first, second, and third stages of its course, will be the means of rendering the operation more perfect, as far as the exposure of the vessel is concerned in it. 15th. The anterior tibial: to bring into view the intermuscular space, at the bottom of which this vessel descends to the foot, a line parallel to the external edge of the tibialis anticus muscle, though oblique to the axis of the limb, is parallel to the course of the artery; hence it will be found more judicious as an operative proceeding to make it a little more oblique than is usually practiced, by which a greater certainty will be had of entering the intermuscular space, and then to find the artery. 16th. The artery on the dorsum of the foot, though the tendon of the *extensus pollicis longus* indicates very accurately the course of the vessel, yet, as it occasionally runs more external to this tendon, by giving it a slight degree of obliquity, it will not only bring us into contact with the artery, but also enable us to be prepared for this deviation from the natural course of the vessel. 17th. Popliteal artery: an oblique incision downwards and inwards will permit the operator to expose the vessel, and to insulate it better from the accompanying nerve and vein, than when parallelism of the incision to the artery is made the rule for the operation. 18th. Posterior tibial artery: as regards the middle and inferior third of the leg, the same principle in the operative proceeding, so frequently inculcated in this communication, will render the proceeding simple, safe, and in most instances, expeditious. Should the surgeon be called on to cut down on the posterior tibial artery in the upper third of its course, by making his incision oblique, though the saphena minor vein and the *communicans tibialis* nerve will be divided as lying in the centre of the incision, still, this lesion will be more than compensated for by the retraction of the *gastrocnemius* and *soleus* muscles, which must facilitate the exposure of the artery at so great a depth at which it lies in this situation from the surface.

In conclusion, to recapitulate the arteries on which this operation is of such utility: 1st, the temporal; 2d, the occipital in its third stage; 3d, external maxillary artery; 4th, lingual; 5th, carotid; 6th, subclavian; 7th, axillary; 8th, brachial; 9th, ulnar; 10th, radial; 11th, internal mammary; 12th, internal epigastric; 13th, external iliac artery; 14th, internal iliac artery; 15th, gluteal artery; 16th, femoral artery; 17th, popliteal artery; 18th, anterior tibial artery; 19th, posterior tibial artery; 20th, *dorsalis pedis* artery.—*Dublin Medical Press*, Feb. 2, 1853.

41. *On the Solution of Urinary Calculi in Dilute Saline Solutions, at the Temperature of the Body, by the Aid of Electricity.*—Dr. H. BENCE JONES recently read a paper on this subject before the Royal Society, containing the record of a number of experiments made to determine whether, out of the body, urinary calculi could be dissolved by placing them in dilute solutions of nitrate of potash and other salts, and then decomposing the solution in contact with the calculus by means of the galvanic battery. The urinary calculus was carefully

dried and weighed, then fixed between the poles of a galvanic battery, after which it was immersed in a solution of nitre, and at the end of the experiment it was redried and reweighed. The loss of weight gave the effect which was produced. The different calculi which had been used were also exhibited, showing the different degrees in which the various kinds of urinary calculi are dissolved when submitted to this treatment. The conclusions at which the author arrived may be thus stated: In a solution of nitre containing 20 grains to the ounce, kept at the temperature of the body, uric acid calculi can be dissolved by the aid of electricity, at the rate of from 2 to 9 grains an hour. The solution takes place at the alkaline or negative pole. In the same time, and under the same circumstances, phosphatic calculi can be dissolved at the rate of from 2 to 25 grains. The solution takes place at the acid or positive pole. Calculi, consisting of oxalate of lime, proved to be far less soluble, usually not more than half a grain an hour, and at most 2 grains being dissolved. At the conclusion of the reading of the paper, the author stated that he had been engaged in making further experiments with a solution of nitrate of potash containing only 10 grains to the ounce; and he exhibited some large uric acid and phosphatic calculi, which had been partially dissolved by the decomposition of this solution at the surface of the calculi. He also showed a catheter or litholyte, made by Weiss, which fulfilled the conditions requisite in an instrument for effecting the solution of urinary calculi in the body. It resembled an ordinary lithotrite, but the blades were—1st, isolated so as to conduct the electricity to the surface of the stone when it had been caught; 2dly, the external surfaces of the blades were guarded, so that in case they came in contact with the mucous membrane, no chemical action would be there set up; 3dly, a double channel for the injection of the solution of nitre was formed inside the instrument. Lastly, the author stated that although many difficulties would have doubtless to be overcome before he could lay the result of his experiments within the body before the Society, still, they would only be mechanical difficulties. The principle, which consisted in setting up mechanical action at the spot where it was wanted, whilst elsewhere a dilute neutral solution was present, left nothing further to be desired; at least so far as the solution of uric and phosphatic calculi was concerned. At present, by the aid of the lithotrite, mechanical force is applied to the surface of the calculus, and the stone is passed in fragments. At some future time, by the aid of the litholyte, chemical force will be set up at the surface of the calculus, and it will be passed in solution, or as an impalpable precipitate.—*Medical Times and Gazette*, January 1, 1853.

42. *Strangulated Inguinal Hernia*.—The *Medical Times and Gazette* (Feb. 19, 1853), contains reports of two cases of strangulated inguinal hernia in patients at periods of life very unusual for such an occurrence. The first was in a boy only twenty-one months old, admitted into the London Hospital, with strangulated inguinal hernia on the right side. All efforts at reduction by taxis failed, even under the influence of chloroform, and Mr. Curling cut down upon the sac. Still, the gut could not be returned, and then a small incision was made in the sac at its upper part, in doing which, the fibres constituting the stricture appeared to have been divided, for the bowel at once returned without difficulty. The patient made a satisfactory recovery.

The subject of the second case was a lad sixteen years of age, admitted into St. Thomas's Hospital, for strangulated hernia of the right side. The operation was performed by Mr. Solly, and presented no unusual feature. Recovery was rapid.

43. *Fibro-plastic Tumours*.—M. LEBERT, the author of the well-known work on Cancer, lately read a paper before the Surgical Society of Paris, on Fibro-plastic Tumours. The principal facts and conclusions brought forward by M. Lebert are the following:—

1. Fibro-plastic tumours are composed of a cellular texture of new formation, similar to that seen in embryonic life. Fibro-plastic tissue may have an inflammatory origin, it may be the result of hypertrophy, or arise quite spontaneously.

2. Fibro-plastic tumours are made up of a soft lobulated tissue, of a pinkish yellow; or else of a firmer texture, of a pale hue, and more homogeneous; or, finally, of a mixture of a gelatiniform substance with the two structures just mentioned. These tumours are situated in the skin, or the subcutaneous areolar tissue; they may be buried in the depth of the muscular masses of a limb, especially the thigh; or else they may spring up in bone, a favourite seat being the jaws; or, finally, they may grow upon the meninges.

3. Fibro-plastic tumours present the same characters in man and in domestic animals.

4. The fibro-plastic texture, which owes its origin to inflammation, has a marked tendency to fibrous transformation; it is often met with in protracted inflammations, of which it is at the same time the support and the product.

5. Fibro-plastic tumours present either a smooth or lobulated surface, and are either globular or flattened, according to their seat, and in cases of hypertrophy they assume the shape of the affected organ. They are generally free and well-defined, but when springing from bone they are sessile, and look like excrescences.

6. These tumours may become very large, both in glandular organs and when seated on limbs, especially when they contain much gelatiniform tissue. They are generally surrounded by a fibro-cellular envelope. When a section is made in a recent case, the liquid obtained is clear and transparent; but it is sometimes thick and dull, when flocculi or entire lobuli are suspended in it. Besides the textures above mentioned, there is sometimes found in the tumours a substance of a pale yellow, and quite dull; sometimes calcareous concretions are found, or else osseous radiations, when the disease begun in the periosteum.

7. Under the microscope, cells with small, rounded, or ovoid nuclei are seen, and all the forms intermediate between the cell and common fibre, especially a great many narrow fusiform bodies; the nucleoli are always very small. There are also perceived original cells with compound nuclei rolled up together, and sometimes fusiform nuclei which then constitute fibro-plastic masses.

8. As regards neighbouring textures, fibro-plastic tumours grow like fibrous tumours, as they press upon these textures without taking their place; whilst cancerous tumours substitute themselves in neighbouring parts. Fibro-plastic tumours follow, as to their growth, the following development: There is first a local deposit; the increase is then slow, but soon becomes rapid; phlegmasia takes place; then come hemorrhage, partial calcification, softening, the formation of cysts, partial ossification, ulceration, and then, in exceptional cases, sloughing.

9. Both sexes are obnoxious to these tumours: they are seen at all ages; but they arise more frequently between thirty-five and fifty years.

10. Recurrence after operation takes place, especially in autogeneous tumours, and has not been observed in fibro-plastic hypertrophy; recurrence is not observed, as in cancer, to arise in distant organs, though it is often caused by an incomplete operation. Notwithstanding the occasional pertinacity of fibro-plastic tumours to recur in the cicatrix, they are not found to injure the general health. In very rare cases, a kind of fibro-plastic diathesis becomes established; this fact has, however, been observed with fibrous, adipose, neuromatous, and melanotic tumours.

11. Singleness and a strictly local nature have been observed as a rule in fibro-plastic tumours. This fact is proved by twenty-six carefully conducted autopsies of cases in which the disease had reached its natural termination, and also by a considerable number of perfect and permanent cures after operation; whilst no such cures are known to exist respecting true cancer.

12. Fibro-plastic tumours have a much more chronic character than cancerous tumours; and save a few cases of very rapid growth, it may be said that fibro-plastic tumours, when they become fatal, last rather more than between five and ten years; whilst the natural duration of cancer is from two to two years and a half. Cases have even been known, and are not rare, in which fibro-plastic tumours have lasted twenty years and more, without much inconvenience. It should, however, be mentioned that these tumours, after a very slow progress, have rapidly assumed a very serious character.

13. Pain is very rarely acute and permanent, and is mostly, as in other tumours, of a neuralgic kind. Functional disturbance depends principally on the seat of the tumour. The general health, in the great majority of cases, remains undisturbed, except in the very rare cases of general fibro-plastic infection, or those in which the local affection has ended in extensive ulceration.

14. The prognosis of fibro-plastic tumours is much more favourable than that of cancer. Curability is the rule. The fibro-plastic texture of inflammatory origin is the more likely to be benign the more it shows a tendency to assume a fibrous character. The prognosis is, in fibro-plastic hypertrophy, likewise favourable. In fact, these tumours constitute a local affection little or not at all likely to recur, which can only become dangerous in so far as its seat, extent, or amount of ulceration are concerned. Kelis is likewise an affection of a simple kind, notwithstanding its pertinacity regarding recurrence in the cicatrix after operation. Fibro-plastic tumours of spontaneous origin are very likely to recur after excision, when they are situated on the tegumentary surface, under the skin, or in the bones. The surgeon should always bear in mind the possibility of general infection, only, however, as to occasional occurrence, but not as a probability. Fibro-plastic tumours seated in the meninges destroy the patient by interfering with the functions of the brain, though remaining all the while a perfectly local affection.

15. The treatment of these tumours should begin with the prolonged use of preparations of iodine, when the origin is of a syphilitic nature, or when the tumour is simply owing to hypertrophy. When an operation is necessary, it should consist, as a rule, of complete extirpation; strong caustics should be tried with superficial tumours of small dimension. Operations in such cases should always be performed boldly, whether the knife be carried into soft parts, or whether the affection be seated in bone. Amputation should be performed when the tumour is situated in the depth of the limb, and the former sends prolongations into parts where dissection is difficult.

Autoplasty should be used to substitute healthy tissue to cicatrices likely to favour recurrence, in operations of a moderate extent, and the tumour is seated on the surface. The actual cautery is necessary when superficial tumours are too extensive to admit of autoplasty.

It is finally advisable to use iodine after operations, as a prophylactic means against recurrence or general infection.—*Lancet*, Feb. 26, 1853.

44. *Relapse of Cancer*.—M. Broca, in a prize essay on the Pathological Anatomy of Cancer, published in the sixteenth volume of *Memoirs of the French Academy of Medicine*, adds some illustrations to the melancholy chapter of relapse of cancer, which he regards as of nearly constant occurrence. Among the patients operated upon by Blandin, in 1847 and 1848, there were 69 who furnished tumours, most of which, prior to the employment of the microscope, would have been regarded as cancerous. On examination, 2 proved to be fibro-colloid, 5 fibro-plastic, 15 epithelial, and 6 partial mammary hypertrophy. Of 39 really cancerous patients, 11 died from the consequences of the operation, and 28 survived these. Of these last, 19 were kept in view, and every one of them had relapse, 16 within the first year, 2 in the course of the second, and the last at the end of the twenty-fifth month. By the beginning of 1850, 17 were dead, and the other two were expected soon to follow them.—*Erit. and For. Med.-Chirurg. Review*, Jan. 1853.

45. *Researches on the Synovial Cysts of the Hand and Wrist*.—M. GOSSELIN, in an interesting memoir in the sixteenth volume of the *Memoirs of the French Academy of Medicine*, relates the results of his anatomical researches, made in the attempt at clearing up some of the confusion and contradictions that have prevailed in the description of these tumours. Confounded formerly under the general name of *ganglion*, these swellings have been, of late, distinguished by most writers accordingly as they have occupied the track of the flexor tendons of the palm, or the extensors at the back of the wrists. The distinction is, indeed, an essential one, for in the former case (*dropical cysts*), an entire synovial bursa is involved, while in the latter (*partial or ganglionic cysts*), a very

circumscribed portion of the synovial membrane is concerned. The object of this paper is to determine the anatomical limits and connections of the first of these, and the mode of formation of the second.

1. *Dropsical Cysts of the Palm*.—Authors have varied much in the descriptions they have given of the direction and number of the synovial membranes accompanying the flexor tendons; and the dissection of more than sixty hands, in both children and adults, enables M. Gosselin to account for this discrepancy by the varieties of distribution which actually prevail. Amidst these there is, however, a regular disposition observed in the majority of cases, and met with in the fetus, children and women not accustomed to manual labour. There are two synovial membranes, which, taking their origin a little above the annular ligament, are continued, the one to the second phalanx of the thumb, and the other to the second phalanx of the little finger. The first of these is reflected from the level of the carpus around the tendon of the flexor proprius of the thumb. The internal one is reflected on to the tendons of the flexors of the little and ring fingers, extending to a much less length along the latter. The tendons of the index and medius fingers are unprovided with these bursæ, and may be separated without opening either the outer or inner synovial cavity. Normally, these two cavities do not communicate, but an occasional variety is met with in which they do. A more frequent variety consists in the presence of a supernumerary sac, placed between the two others, above the annular ligament, and not unfrequently communicating with one of them, especially the internal. In the course of the prolongation of the internal cavity, it normally undergoes a narrowing at about midway of its course, and a not unfrequent variety is found in its becoming obliterated at this point. As a fourth variety, may be noticed the presence of small, isolated, synovial sheaths, distinct from the others, formed from the cellular tissue of the superficial tendons. Thus, normally, there are two synovial cavities in this locality; and when authors have described more, they have been alluding to some of these varieties. We see also why, as a result of chronic inflammation, the little and ring fingers are those especially liable to become contracted.

2. *Ganglionic or Partial Synovial Cysts*.—M. Gosselin has nothing new to communicate respecting the symptoms or treatment of these ganglions, so often met with at the back of the wrist, his object being merely to draw attention to their mode of origin. After adverting to the different explanations of this, hazarded by prior writers, he states that he has been led to offer a new one, by having observed, in a great number of radio-carpal joints he has examined, immediately beneath the synovial membrane, behind the semilunar and scaphoid bones, certain whitish or grayish corpuseles, varying in size from that of a millet-seed to that of a pea. Some of these slightly project into the articulation, but, in most cases, concealed in the sub-synovial cellular tissue, they are only brought into view by the careful removal of the synovial membrane, to which they somewhat firmly adhere. Usually, they do not communicate with the joints, no orifice being discernible; and their contents, which resemble those of ganglions, only issue out upon incision. These *sub-synovial* bodies are also met with in the medio-carpal joints, but much more rarely. Whether viewed as to their *locale* or their contents, these bodies must be regarded as exhibiting the earliest stage of ganglionic formations; and the frequency of their existence, and regularity of their position, lead to the inference that they are modifications of a natural disposition. Additional researches have brought M. Gosselin to the conclusion that all the articular synovial membranes (and especially those of the wrist) are provided with prolongations, or *culs de sac*, which may be called *synoviparous crypts* or *follicles*, and that the obliteration of the orifice of these crypts gives rise to the accumulation of synovia. The crypts are, indeed, but one of the means employed for extending the synovial secreting surface; and in some instances they communicate with the general cavity by broad, and in others by very minute openings, the latter being liable to this obstruction. Velpeau and the Webers have, indeed, adverted to these synovial prolongations, but they have not generalized their descriptions, or made the pathological application. These crypts are to be found in all the principal articulations; and in the horse these follicles and their communicat-

ing orifices are found on a much larger scale. Taking this general view of them, the conclusion becomes irresistible, that these depressions of the synovial membranes are means for the enlargement of surface analogous to the single follicles of the skin and mucous membranes. The reason why the orifice of these follicles of the wrist-joint should so especially become obliterated, and give rise to ganglions, is not to be ascertained any more than that of the greater frequency of sebaceous cysts in certain regions of the skin. The sub-synovial bodies thus produced may remain stationary, their outward progress being opposed by the aponeuroses which surround them; or they may increase towards the cavity of the joint, into which they may at last burst. If the aponeurotic resistance is less decided, or in part destroyed, the bodies make their way towards the surface under the form of *ganglions*. M. Gosselin has been unable to observe any of the synoviparous follicles in the sheaths and bursa of the tendons; and it is therefore a highly important fact, in a practical point of view, that the ganglions are in communication, not with these sheaths, but with the joint itself, into which, indeed, they sometimes, at an advanced period, discharge themselves.—*Brit. and For. Med.-Chirurg. Review*, Jan. 1853.

46. *Inflammatory and Non-inflammatory Ruptures of Ovarian Dropsical Cysts*.—Professor J. Y. Simpson has published (*Monthly Journ. of Med Sci.* Dec. 1852) some interesting observations on this subject. The following are his conclusions:—

1. The cysts forming an ovarian dropsy, occasionally rupture, *first*, from inflammatory effusion into and distension of their cavities; or, *secondly* (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter), they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous, and generally fatal, peritonitis.

3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distension of its cavity, and the fluid effused into the sac of the peritoneum is consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged, by this accident.

5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal, or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

Lastly, let me add that, as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases, and more particularly in instances in which the bulk of the tumour is formed by one large preponderating cyst.

47. *Rupture of the Perineum*.—Mr. I. B. Brown read an interesting paper on this subject before the Medical Society of London, January 8, 1853. He began by referring to a paper that he read before the Society in 1851, and recapitulating some of the points therein discussed, introduced his new mode of operating for ruptured perineum. The patient should be placed in the position for lithotomy; the knees well bent back upon the abdomen by an assistant to each leg; that the parts around should be carefully cleansed of hair by shaving; then each assistant should hold the sides of the vagina and perineum, so as to insure sufficient tension for the operator to make a clean incision with a scalpel down

into the vagina about three-quarters of an inch on each side, removing carefully and thoroughly the mucous membrane. Having done both sides, there would still remain a space covered with mucous membrane between those two sides, embracing the edges of the rectum where the sphincter was lost; that this must also be carefully denuded—very carefully, because, if there remained the slightest portion of mucous membrane around, or even near to the rectum, then most certainly there would be a recto-vaginal fistula after the restoration of the perineum; that some operators, especially on the continent, had removed the mucous membrane by the scissors, but Mr. Brown stated that that was a long and insecure method, and that the knife would be found quicker and better. Mr. Brown observed, that as soon as this stage of the operation was completed, the sphincter should be divided as before described; then the legs should be relaxed, and the thighs brought more in apposition, so as to allow the sides of the vagina to be grasped with the forefinger and thumb of the left hand, while with the right the sutures were passed deeply through each side, as deep as the denuded surfaces of the vagina; the first backwards, as near the rectum as possible without piercing it; the second and third in the same way; that the length of the incision should correspond with the scar of the ruptured surfaces; that the sutures were double, so as to allow the quill, or, more properly, the piece of elastic bougie, to pass through each suture on both sides; Mr. Brown preferred twice to silk for the sutures, because it was less irritating, and produced, therefore, less suppuration; that the forefinger of the right hand should then be passed into the vagina, and the forefinger of the left hand into the rectum, so as to ascertain that there was no opening; that, having secured the three sutures firmly to the bougies, it was advisable to bring the edges of the incised surfaces together by three or four interrupted sutures; that, if this step of the operation be carefully done, union of the skin would quickly take place, and materially facilitate the union of the deeper surfaces. Mr. Brown observed, that it had been asserted by many accoucheurs of the highest eminence, that if the operation be performed immediately after the accident, no good would result, as the lochia would flow in between the surfaces, and thus prevent adhesion and union; that he had found that opinion to be entertained by Trogher, in the 7th volume of the *Vienna Journal*, for 1851; for he therein states, among other conclusions drawn from sixteen cases, "that a favourable issue could only be expected where there was a very moderate flow of lochia;" also, "that it was impossible to protect the margins of the wound from the injurious influence of the lochia." Mr. Brown believed that these objections were removed by dividing the sphincter; if not divided, the inner edges of the wound would be gradually drawn apart by the action of that muscle, and the lochia would penetrate; whereas, after division, those edges were perfectly passive, and steadily kept together by the sutures. In the after treatment, great stress was laid upon keeping the patient quiet, drawing off the urine as often as required, and the use of opium to keep the bowels constipated for several days after the operation. Mr. Brown stated that, for the convenience of discussion, and in order to make his paper more intelligible, he affirmed four distinct propositions, which he hoped to demonstrate by the cases which followed: Firstly, That the oldest and worst forms of ruptured perineum could be cured by the operation he had already described. Secondly, That the worst forms could be cured by operating immediately after the lesion. Thirdly, That the new perineum was not torn by, or prejudicial to, subsequent parturition. Fourthly, That those forms of rupture where the sphincter was not torn through, should be cured to prevent prolapsus uteri, &c. Mr. Brown illustrated the first proposition by five cases; then the second and third propositions by three cases; and, finally, the fourth proposition by two cases.

Dr. BARNES said it was impossible to overdraw the picture of the miseries, physical, mental, and social, which resulted from this terrible infliction, nor was it possible to estimate too highly the means of bringing relief. It certainly was true that this accident was a reproach to surgery; many eminent surgeons had abandoned the hope of giving effectual relief. It was to escape from this difficulty that some obstetric authors had endeavoured to persuade themselves that a ruptured perineum was, to a certain extent, a good thing, inasmuch as

a future labour would be easier. Confident that the perineum was a useful structure, and that the design of nature was clear, he (Dr. Barnes) strenuously maintained that in every case of laceration the injury should be repaired to the utmost possible extent. Before considering the merits of Mr. Brown's proceeding, he (Dr. Barnes) would make one observation upon a purely obstetric point, in which he thought Mr. Brown had come to a hasty conclusion. Mr. Brown had stated, that whenever the pains in labour gave way after labour had made some progress, he drew the conclusion that the cord was twisted round the child's body, and that the child's life was in danger, or rupture of the perineum was to be feared. He (Dr. Barnes) could not trace any connection between twisting of the cord and rupture of the perineum. Again, when a remission of the pains, such as Mr. Brown referred to, occurred, such pains as he (Dr. Barnes) had been accustomed to call "abortive pains," there were numerous causes to which they might be attributed; any impediment to the labour might account for it; the one which Mr. Brown alluded to was only one among many. To the operation pursued by Mr. Brown, he (Dr. Barnes) was willing to accord considerable praise; but he thought it inferior to the proceeding of Mr. Charles Brooke. The two great objects of this operation were to obtain perfect apposition of the two surfaces, and then to secure perfect quiescence. He believed this could not be done by the common quill-suture employed by Mr. Brown; whereas, by means of the bead-sutures of Mr. Brooke, these objects were perfectly obtained. Another great advantage over the quill-suture was, that by means of the bead-suture a perfect apposition of the internal wound—that of the mucous membrane of the vagina—could be obtained by the use of one or more sutures for this purpose. In this manner the lodgment of any foul secretions between the edges of the wound inside the vagina—a great source of failure in these operations—was avoided. There were two points much insisted upon by Mr. Brown, upon which he (Dr. Barnes) could not agree. From his own experience of two successful cases, he was prepared to say that the practice of locking up the bowels for eighteen days was not necessary; and he could not but apprehend that some injurious effects upon the system might ensue from the continued large doses of opium given for that purpose. The division of the sphincter was an important improvement upon the old proceeding when the quill-suture was employed; but with the bead-suture he did not believe it was always required. In the two cases he had witnessed, in which Mr. Brooke's plan was followed, in one of which Mr. Brooke operated, and in the other when he (Dr. Barnes) had performed it himself, entire success was obtained by the perfect security against motion provided by the bead-sutures. Undoubtedly, Mr. Brown was justified in surrounding his operation with every possible precaution. He (Dr. Barnes) however wished to suggest to Mr. Brown, that in any future case he should, when dividing the sphincter—for if he adhered to the old quill-suture, in order to secure the success of his operation he must divide the sphincter, that he should do so by subcutaneous section; he had several times seen this done by M. Blandin, the late Professor of Surgery, at Paris; and he (Dr. Barnes) considered it much preferable to the severe proceeding of cutting through all the structures of the rectum. In concluding, he would again express his sense of the value of Mr. Brown's communication; but he felt called upon to remark, that Mr. Brooke's method had been before the profession for some years, and that in any discussion upon the methods of relieving lacerations of the perineum it ought not to be passed over.

Dr. MENNEN could not agree in all the views expressed by Mr. Brown, though he admitted that new light had been thrown upon the subject by the paper. The paper must be regarded from two points of view: first, in its surgical, and secondly, in an obstetrical point of view—viz., as to the selection of cases which required operation, and of those which should be left alone. In the two first cases detailed by Mr. Brown, in which the sphincter had been entirely divided, the operation was excellent; but in the slighter cases, in which there was only slight laceration of the external sphincter, he questioned the propriety of operative procedure, looking at the risk of mischief following it, particularly when resorted to immediately after delivery. He must, therefore, protest against cutting so soon after parturition. Looking at what nature effected in slight

cases of laceration of the perineum, he did not consider that the operation would, in these instances, be often necessary. Let alone, they became so contracted that even where the perineum had been ruptured to the extent of two and a half inches, it would, in course of time, be so repaired, that it would not be known that any laceration had taken place. If, therefore, the laceration was not so great that support was not lost for the uterus, it was not necessary, in his opinion, to operate. In the cases operated upon, Mr. Brown had related one in which the contraction following the operation was so great, that the perineum would again have ruptured during parturition had not chloroform been administered to the patient. A new cicatrix would rupture more quickly, and perhaps to a greater extent than the original normal texture; for the tissue of the cicatrix would not expand, and there would be great fear of rupture.

Mr. Brown, in reply, spoke of the great neglect of English and foreign authors, in respect to the operation for lacerated perineum. He believed that the operation hitherto has failed mainly from the neglect of the after-treatment. With respect to the bead-suture, he could not see its advantage over the one he had used, and found successful. He urged the necessity of division of the sphincter before the application of the sutures, in bad cases. He defended the use of opium to constipate the bowels, and had never seen any ill effects from its employment. He contended that the subcutaneous division of the sphincter, as recommended by some, would not be sufficient; the entire structure must be divided, in order that no stress whatever should be made on the divided edges. He differed with Dr. Murphy as to the risk of the operation in respect to vaginitis. He supported patients with meat and wine from the commencement, even when the opium was being used. With respect to smaller lacerations, he contended that it was the duty of the surgeon, if he could afford any relief, to give it.—*Lancet*, Jan. 22, 1853.

48. *Iodide of Sodium in the Treatment of Constitutional Syphilis.*—Dr. UNATDO DAVENI has employed the iodide of sodium instead of the corresponding salt of potash. The iodide of sodium employed by Dr. D. was prepared according to Ruspini's directions, by placing three ounces of filings of iron in two and a half pounds of distilled water, and gradually adding, with constant agitation, a pound of iodine; as soon as the mixture had acquired a greenish colour, it was filtered, and quickly treated with a solution of carbonate of soda until all the iron was thrown down. The carbonate of iron thus formed was separated by filtration, the filtered fluid evaporated to dryness, and the residuum again dissolved, filtered, and evaporated until a pellicle had formed. By this method fourteen ounces of iodide of sodium were procured in the form of white rhomboidal prisms, deliquescent, and having a saltish taste less disagreeable than that of iodide of potassium.

The iodide thus prepared was found to answer much better than that made from iodine and caustic soda, the salt procured by the latter process being not only disagreeable to the taste, but giving rise to a burning sensation in the fauces, to weight and uneasiness in the stomach, and to gastro-enteric pains—effects attributed by the author to an excess of iodine which the salt was, by analysis, found to contain.

The dose administered at the commencement of the treatment was always a scruple of the iodide dissolved in three ounces of distilled water, and given in three equal portions in the course of twenty-four hours. The salt was likewise employed, in the form of ointment, in the proportion of half a drachm or a drachm to the ounce of lard. In the administration of the iodide of sodium, the same rules and precautions are to be observed as apply to the use of the potassium salt. Although the author, for reasons and facts set forth in his *Manual of Venereal Diseases*, repudiates the distinction of constitutional syphilis into secondary and tertiary, he divides the 116 cases, on the observation and treatment of which his present paper is based, into the three following classes:—

1. Cases of constitutional syphilis in which so-called secondary and tertiary phenomena coexisted.
2. Cases of so-called tertiary lues in which the use of mercury preceded the treatment by iodide of sodium.

3. Cases of so-called tertiary lues in which iodide of sodium alone was employed.

Of the first class, twelve cases, in which the symptoms were pains in the bones or periostitis, united with some manifestly constitutional affection of the skin, generally of a papular or pustular form, were treated with iodide of sodium. In eight of these cases the use of the salt alone effected a cure; in the remaining four it was necessary to have recourse to mercurial frictions to remove the cutaneous affection which remained after the tertiary symptom had yielded to the administration of the iodide. The minimum quantity which succeeded in curing the disease was three drachms, the maximum three ounces; the quantity which was usually required ranged from two to three ounces; the shortest time in which the symptoms were removed was nine days, the longest three months, the average was about a month.

The author thinks it possible that the four cases in which the iodide of sodium thus appeared to fail might have yielded to a longer perseverance in the use of the salt. This was, however, precluded by the circumstances of the individual cases.

The cases of the second class, or those of so-called tertiary lues, in which the use of mercury preceded the treatment by iodide of sodium, were seventeen; in some of these, six or seven ounces of strong mercurial ointment had been rubbed in; the average quantity was from four to five ounces. The minimum quantity of iodide of sodium administered was three drachms, the maximum, four and a half ounces, the average from one to two ounces. It is most important to observe, that those patients who had derived no benefit from a protracted course of mercurial treatment, were cured after the administration of a small quantity of iodide of sodium; while this remedy had to be given to the extent of four and a half ounces in cases in which only a limited number of mercurial frictions had been used: the patients who resisted the long-continued employment of the ointment, laboured under osteocopic pains, which subsequently gave way to a small quantity of the iodide; while those who practised without benefit a moderate number of mercurial frictions, suffered either from syphilitic rheumatism, or from a mixture of syphilis and scrofula. This fact of the iodide being required in the inverse ratio of the amount of mercury previously employed, arises, the author thinks, from this—that in the first case the use of mercury had in a great measure overcome the syphilitic element, which was then entirely removed by the administration of the iodide; while in the second, the elimination of the constitutional venereal principle commenced by the mercury was, for the most part, reserved for the iodide of sodium; and he points to a therapeutic consonance between the two agents, corroborating an opinion formerly advanced by him that the iodides of sodium and potassium are the best substitutes for mercury, as they are about equally efficacious with it in the treatment of so-called tertiary phenomena.

The cases belonging to the third class, comprising those of so-called tertiary lues, in which the iodide of sodium was the only medicine administered, were eighty-five in number; of these, thirty-seven were cases of *ostalgia*, in the treatment of which vapour-baths and iodide of sodium were employed; the minimum quantity of the latter given was from one to seven drachms, the maximum from eight to twelve ounces, the average from two to four ounces. Of *rheumatism*, the cases were seventeen—likewise treated with vapour baths and the iodide; the minimum dose of the latter being from two to four drachms, the maximum nine ounces, the average two to four ounces. Of *arthralgia*, nine cases were similarly treated, the minimum quantity employed having been seven drachms, the maximum two ounces. Of the other varieties of tertiary disease, the numbers were too limited to require special mention, or to justify the deduction of conclusions from them.

The inconveniences which frequently attend the use of the preparations of iodine, and amongst them of iodide of potassium—such as derangement of the stomach, iodic eructations, pyalism, and affections of the throat, were seldom met with from the time the iodide of sodium was substituted for the potassium salt; consequently, the remedy could be more steadily persevered with, and its dose more rapidly increased; circumstances directly promoting the cure of the

diseases for which it was administered. In the few cases in which pytalism occurred, it totally ceased on suspending the medicine for two or three days. In but a single case did it appear to be obstinate; and in this instance the mouth was, on examination, found to be pale, free from swelling, and very slightly painful; as the patient lay in a ward with many syphilitic patients under mercurial treatment, it was thought the salivation might be owing to mercurial vapour present in the atmosphere, a suspicion which was verified by the result; for on removing the patient to another apartment free from mercurial contamination, the salivation entirely ceased in two days.

At the time the author drew up the report of the first experiments with this salt, Dr. Lesi, Assistant Physician to the Hospital of Saint Orsola, had noted that the mean time required for the cure of nineteen patients treated with the iodide of sodium was about twenty-eight or twenty-nine days, while with the potassium salt, likewise exhibited in nineteen cases, the average time was from thirty-four to thirty-five days. Many cases which had either not got entirely well, or were proceeding but slowly under the use of the iodide of potassium, were rapidly cured by the substitution of the corresponding salt of sodium.

Several of the cases, however, treated with iodide of sodium relapsed, and the disease again yielded sometimes to a repetition of the remedy, sometimes to the use of mercurial frictions. But this circumstance cannot be urged against the iodide of sodium alone; for the same is equally true of every other anti-venereal remedy—one of the leading features of lues being its tendency to present periods of lull and of relapse, whatever be the therapeutic means employed to combat the constitutional taint from the first moment of its manifestation to the last evidence of specific disease.

The author concludes his paper with the following *resumé*:—

1. Soda being a very common ingredient in our organism, the iodide of its base appears best suited to the human system.

2. The taste of the iodide of sodium is much less disagreeable than that of the iodide of potassium.

3. It is less likely to occasion iodism.

4. It is better borne than the potassium salt, and in consequence of this its dose can be almost daily increased, and it thus becomes a more efficient remedy.

5. It has sometimes succeeded where the iodide of potassium had failed.

6. We may commence by giving daily, in three equal doses, a scruple of the salt dissolved in three ounces of distilled water, increasing the strength of the solution every two or three days by six grains. Some patients have in this way been able to take more than two drachms a day without suffering the slightest inconvenience.

7. The iodide of sodium is admirably adapted to cases in which the corresponding salt of potassium is indicated.

8. The iodide of sodium is the best substitute for mercury.—*Dublin Quarterly Journ.* Nov. 1852, from *Corrispondenza Scientifica di Roma*, 1852, No. 32.

49. *Paste made with Sulphuric Acid and Saffron as a new Caustic in Malignant Ulceration of the Face*.—M. E. CAZENAVE, of Pau, relates, in *L'Union Médicale* for 22d January, two cases of malignant ulceration of the face, in which he has successfully employed a local application, made from sulphuric acid and powdered saffron. The remedy is formed by pouring the acid on the saffron, and applying it in the form of a soft paste. Its corrosive action is immediately manifested on the diseased tissues; the paste dries, and falls off in two or three days, in the form of black crusts, which carry with them the eschar. The application is made several times; the wound assumes a healthy red tint, and cicatrization takes place. In one case a year has elapsed, and in the other two years; and the disease has not returned.

The efficacy of this treatment is evidently dependent on the sulphuric acid, which, we believe, would succeed equally well if made into a paste with common flour, or any ligneous powder, as with saffron. A paste of sulphuric acid and flour would be worth trying in obstinate cases of phagedenic ulceration.—*Assoc. Med. Journ.* Jan. 28, 1853.

50. *Suppuration in the Mastoid Process in Children.* By Dr. RIECKE, of Berlin.—The formation of pus in the ear is not unfrequent in scrofulous children, but the extension of the suppuration to the mastoid process of the temporal bone is rare. I shall here describe some cases in which the mode of this occurrence appears to me to be still more interesting than the occurrence itself.

M. v. E., a weakly child of scrofulous tendency, and excitable nervous system, in January, 1835, while playing in stormy weather in the open air, was seized with most violent pain in the right ear. She became somewhat feverish, and the attack appeared to consist merely in a slight cold affecting the ear. Mild diaphoretics, little bags of warmed herbs laid upon the ear, a warm bed, and a small blister to the nape of the neck, soon gave relief. After some days a brownish-yellow thin discharge took place from the right ear, which in the course of a few days more became whitish and thicker, and lasted a fortnight. It then entirely ceased for a fortnight, the patient being in other respects well; nevertheless, the violent pain increased, without external cause, and the secretion from the ear subsequently set in again. The discharge did not diminish under the employment of stronger derivative measures, such as blistering and purgatives; the pain, however, disappeared. In the beginning of April, the skin covering the mastoid process behind the right ear began to swell, to be tender, and to assume a reddish colour. Pain and fever again set in. Leeching and the application of mercurial ointment gave relief; a greater discharge again took place from the ear, and the patient hawked up, especially on awaking in the morning, much purulent matter. Alternative medicines were exhibited, and the case was going on well. The swelling and pain in the mastoid process diminished. Fourteen days after, a swelling again suddenly took place, while the discharge from the ear ceased. The tumour was so large that it threatened to break, and I thought I could distinguish with the touch through the soft swelling the expanded laminae of the bone. I now meditated opening the tumour, but at one time the dread of the knife manifested by the little patient and her friends, at another the apprehension that the probably unfavourable result would be attributed, as it so often is by the ignorant, to surgical interference, prevented me doing so, a policy not blamable in a young practitioner, especially where there is no pressing indication to use the knife. Injection into the ear and the application of warm emollient poultices to the parts were now repeated in order to re-establish the discharge. At length the discharge from the ear suddenly recommenced; during the following night the little patient again brought up a quantity of bloody pus, and the great external swelling of the mastoid process as suddenly disappeared. The discharge from the ear continued until the middle of May; it was reported to have been fetid during the entire of one day; with this exception it was free from smell. On a sudden, a swelling of the mastoid process took place within a few hours, attended as before with a cessation of the discharge from the ear. It was easy to feel fluctuation under the laminae of bone covered by the thin integuments, and the tumour appeared this time to be decidedly about to open. Nevertheless, a purulent discharge was again established from the ear and throat; the mastoid tumour quickly diminished; and by the end of May the discharge had entirely ceased both from the ear and throat. Hearing continued unimpaired, so that in the month of June the patient's recovery was complete.

This was one of the rarer cases of affection of the ear in which the pus flows through the Eustachian tube to the throat. It may certainly often occur without being observed, for in the daytime the discharge is generally swallowed by the little patient; it is only in the morning, when it collects in greater quantity, that it is brought up. The case should also teach us not to be overhasty in opening such tumours externally, a proceeding which might induce the establishment of a tedious caries, and leave behind it a disfiguring scar. The following affords an additional illustration of the truth of this view.

In the April of the same year, the wife of a wind-miller brought me her son, aged four years, who was suffering from caries of the mastoid process. On inquiry into the history of the case, I ascertained that he, likewise, in the month of January, 1835, was attacked with pain in the ear, otorrhoea, and swelling of the mastoid process, which finally burst, without medical assistance having

been sought. The child being otherwise in good health, the sore healed in a few months without other treatment than attention to cleanliness. A year subsequently his head was crushed by the sail-beam of the windmill, and he died in an hour after the injury. On dissection, I examined the mastoid process. There was a deep tortuous canal of the size of a crowquill, which involved the internal layers of the temporal bone, and was lined by a thin membrane covered with a brown greasy, fatty matter. The cells of the mastoid process which were not touched by this canal were in their normal condition; those situated in its neighbourhood had grown into union with it.

It is remarkable that in the month of April a third patient, the son of a brickburner, was brought to me with a fistula in the mastoid process, which dated its origin from an attack of acute earache, caused by exposure to severe weather in the preceding January. All three patients, it was proved, had brought on the attack on a very stormy day; the first, in a playground adjoining a highly located church; the miller's son in the neighbourhood of the mill, likewise in an elevated situation; the son of the brickburner in the exposed locality of the tiler's hut. It appears to me remarkable that, although I have during thirty years had much experience, no similar case should have occurred to me either before or since those I have detailed. Three cases of an undoubtedly rare affection arising at once, and, so to speak, even in one day, almost point to an epidemic origin. Acute and violent earache in children, who pass from a warm room into a severe and piercing January wind, is a frequent occurrence, but it is certainly rare and remarkable that in each of these three patients, the affection should have had the same unusual termination in suppuration of the mastoid process. I may also observe that my case-book at that time contains no history of any affection of the ear but the three given above.

It would not be uninteresting, in reference to the theory of the origin of epidemic diseases, if other physicians had experienced something similar at that period, and would record their observations. Since we now know that the air is at times impregnated with matters (ozone) which have an irritating effect on the respiratory passages, a strong current of air pressing into the ear may, if it contains an irritating principle, excite in this organ very peculiar affections. In natural science every observation is of value, and often finds its explanation only after the lapse of years, or even of decennial periods. For this reason it may be useful to have recorded the foregoing cases; besides, they afford instructive proof that in abscess of the mastoid process, we should not hastily have recourse to the knife; and they also show that we need not very much dread the occurrence of caries, if we take care to avoid employing means which may be productive of injurious consequences. My patients recovered under simple treatment.—*Dublin Quarterly Journ.* Nov. 1852, from *Journal für Kinderkrankheiten*, March and April, 1852.

OPHTHALMOLOGY.

51. *Benzoic Acid in the Treatment of Scleritis*.—MR. WHITE COOPER, in an interesting paper on Scleritis (*Association Medical Journal*, Jan. 28, 1853), states that he has employed, at the suggestion of Mr. Ure, the benzoic acid in this disease, in the case of a member of Parliament, who from exposure was attacked by rheumatism of the muscles, followed by a sudden attack of scleritis of one eye, which for a fortnight had bid defiance to active general measures and local sedatives and astringents. When seen by Mr. Cooper, the conjunctiva and sclerotics were intensely inflamed, the corneal zone being strongly marked. The iris, naturally blue, had a green tinge, but was not otherwise altered; the pupil was contracted, and sluggish; the globe excessively tender; he had much mistiness of vision, intolerance of light, and profuse discharge of scalding tears. There was great supraorbital pain, involving the whole side of the head, and

greatly aggravated at night. This state of things had existed a fortnight, and he was very low, with cold skin, and feeble pulse.

The history of the case, and the symptoms, indicated rheumatic scleritis, which had gradually involved the iris and the choroid; and Mr. C. thought it a favourable opportunity for trying benzoic acid. Six leeches were first applied to the mastoid, and the patient was then ordered to take half a drachm of powdered benzoic acid thrice a day. He began this on a Tuesday. On the Thursday, there was a manifest improvement; he had passed a good night, and could face the light, whilst the local inflammation had materially decreased. The powders were stopped on the Friday, as he complained that they made him sick; the improvement, however, continued. The only other medicine ordered was a little gray powder; and on the Monday following—the sixth day after fairly commencing this treatment—the patient left town with his eye almost entirely free from redness, and with merely some haze of vision, all which symptoms, Mr. C. subsequently learned, disappeared in the course of another week.

52. *On the Use of Chloroform in Operations on the Eye.* By WHITE COOPER, Ophthalmic Surgeon to St. Mary's Hospital, &c.—In common with many others, I for some time hesitated before using chloroform in extraction of cataract, from a fear that the object of the operation might be defeated by the eye receiving injury during the return to consciousness, or by vomiting afterwards. It appeared to me, however, so deserving of a trial, that nearly two years ago I first employed it, and since that time have availed myself of it very frequently in operations on the eye, including sixteen cases of extraction of cataract, nine of artificial pupil, four of foreign bodies in the eyeball, and two of tumours in the globe, besides numerous needle cases. Several of the cases have been published in the *London Journal of Medicine*;¹ and among the gentlemen who witnessed the more difficult operations, I may mention Mr. Barnard Holt, Mr. W. F. Barlow, Mr. Holmes Coote, Mr. Charles Hawkins, Mr. G. Pollock, Mr. J. R. Lane, Dr. Toogood, etc. Having had this experience, I propose to offer a few observations, which may be found practically useful.

The advantages obtained by the use of chloroform in operations on the eye, are, a perfectly quiescent condition of all the muscles, whether of the globe or the lids, absence of congestion of the eye, and mental tranquillity for the patient. To the operator, the perfect repose of the eye affords a manifest advantage, the various steps of the operation being performed with as much facility as in a demonstration on the dead subject; the risk of prolapse of the iris (which is usually caused by muscular action) is greatly diminished, and the corneal flap can be accurately adjusted.

Under ordinary circumstances, the very act of raising the lid and fixing it, causes a sympathetic rush of blood to the eye, which vascularity is increased during the various stages of the operation. When the patient is unconscious, nothing of the sort happens. I have repeatedly completed the extraction, leaving the eye as free from congestion as before it was commenced; and the same has been noticed by gentlemen who have witnessed my needle operations at St. Mary's.

There is perhaps no operation more dreaded by nervous persons than that of extraction, from an exaggerated idea of the sensibility of the eye. The knowledge that the operation will be performed without the least suffering, inspires such persons with confidence; and the joyous state of mind which all patients experience on awaking from sleep and finding the operation concluded and the eye bound up, is highly favourable for recovery. And now as to the proceedings.

I strongly advise that in operations on the eye under chloroform, there should be at least one competent assistant besides the operator and the administrator of chloroform; each of these has his own department to engage his attention, and it is most embarrassing to have the patient partially recover and struggle just at a critical moment. This occurred in the first extraction under chloroform

¹ "Cases of Foreign Bodies in the Eye," vol. iv. p. 301; "On Cysts in the Interior of the Eye," vol. vi. p. 787.

performed by me; and, as it was the first case of the sort in which Dr. Snow had administered the vapour, the patient had not a sufficient dose. It unfortunately happened that the gentleman who was to have assisted me was prevented keeping his appointment, but I imagined that the doctor and I could manage the lady ourselves; in due time, she appeared completely insensible, but just as the section was being satisfactorily completed, the patient threw her head on one side and tried to sit up; the consequence was, that the operation was impeded, considerable prolapse of the iris took place, and a closed pupil was the result.

The patient should be recumbent. In that posture he can rest quietly after the operation, and is more manageable during the period of excitement than when sitting in a chair. I have tried the administration of chloroform on a handkerchief, and by means of Dr. Snow's apparatus, and decidedly prefer the latter. When the handkerchief was used, it was in my way, and the fumes of the chloroform annoyed me—matters of importance in such a delicate proceeding as extraction. A full dose of chloroform is necessary, and the patient should not partake of food for five or six hours prior to the operation; but he may swallow a few fragments of ice just before it is commenced, and again as soon as consciousness returns. This (which I believe was first suggested by Dr. Simpson, of Edinburgh) allays any tendency to vomit. I prefer operating in the afternoon, as the soporific effect of the chloroform continuing, generally insures a good night; but the hands must be secured, and the patient carefully watched, as under ordinary circumstances.

With regard to the operation itself, it is important to have the point of the extraction-knife as sharp and the edge as keen as possible. If there be the least *hanging*, the eye will be pushed before the knife, from the utter passiveness of all the muscles, and unless the operator is prepared for this, there will be great probability of the counter-puncture being made too near the centre of the cornea, whereby the section will be too small.

During extraction, as ordinarily performed, the lid is dropped as soon as the section is completed, and a pause takes place to permit the eye to become quiet. Under chloroform, this is unnecessary; there being no spasm, the curette may be used, and the cataract pressed out the moment the section is completed. When the lens has escaped, the eye presents a curious appearance, always supposing enough chloroform has been administered; the muscles being passive, the iris falls back in a concave form, and the cornea having no support, sinks, becoming as wrinkled as a shrivelled apple. The eye having been gently cleansed, and the lids dried with a soft rag, the upper lid should be lifted by the lashes and brought down over the cornea; then two broad strips of adhesive plaster should be crossed over the eye and cheek, a bandage applied, and the patient left quiet for half an hour or an hour, after which he can be removed to bed. When all fear of vomiting has subsided, the plaster may be taken off: but it must be thoroughly softened with warm water, and lifted with the utmost caution and gentleness, so that there be no dragging on the lids. The subsequent proceedings differ in no respects from those practised after the operation as ordinarily performed.

In these remarks I have especially mentioned extraction, but the general directions are equally applicable to all operations on the eye; and, I may add in conclusion, that when operating on an eye in a state of inflammation, as in the extraction of a foreign body, a shot, a fragment of steel, or copper cap, the value of chloroform cannot be too highly estimated.—*Ass. Med. Journ.* Jan. 7, 1853.

53. *Observations on Morgagnian Cataract, with Cases.* By W. R. WILDE, Esq., F. R. C. S.—Cases of what are termed Morgagnian cataract being very rare, their pathology being but imperfectly understood, and great variety of opinion existing among authors with respect to their cause, symptoms, and treatment, I am induced to offer to the profession the following observations on the subject, the result of four cases which came under my notice within the last few years. The question of a fluid existing during life between the capsule and the lens, as originally believed by Morgagni, would appear to be set at rest by the

investigations of modern anatomists, who have paid special attention to the structures of the eye—the late Mr. Dalrymple, Dr. Jacob, and Mr. Bowman. By those, however, who believed in the existence of this fluid between the capsule and lens during life, it was conceived that a morbid action might be set up in it, whereby it became muddy or opalescent, the lens itself retaining its transparency and form. The best ophthalmic pathologists, however, of the present day, are of opinion that the Morgagnian is but a variety of fluid cataract, commencing in the external layer of the lens, and which process, if continued long enough, would end in softening of the whole. In addition to this, Mr. T. Wharton Jones, in his *Manual of Ophthalmic Medicine and Surgery*, says: "With, perhaps, absorption by endosmosis of aqueous humour into the capsule determined by a diseased state of the lens, similar to what takes place after death, and which is the true source of what is called the Morgagnian fluid."

The discrepancy which exists in the opinions, and the variety in the descriptions of authors, as well as the number of names applied to this form of cataract, have apparently arisen from the inexact knowledge of pathologists, and the views formerly entertained with regard to the Morgagnian fluid. We read of it in books under the names of cataracta Morgagniana, cataracta lactea, cataracta puriformis, hydrops lentis crystallinae, the Morgagnische staar of the Germans, and the cataracte interstitielle of French writers. Jannin was the first to distinguish it from milky cataract.

Pott says that the lens "is capable of being dissolved or becoming fluid without losing any of its transparency;" and, in a note to the foregoing paragraph, the same authority says: "Sometimes, from distemper, I have no doubt that the whole crystalline is dissolved into a fluid, still retaining its transparency."—(*Chirurgical Works*, Vol. III. p. 216.) This is a condition which I have not observed, and one on which I should like to obtain the opinion of the profession. Still, Pott seemed, according to the general tenor of his "Remarks on the Cataract," well aware of the softened state which the external layer of the lens assumes in some forms of cataract.

The younger Wenzel believed in an altered condition of the liquor Morgagni, without any sensible change in the structure, size, or transparency of the lens, and has given two cases in proof thereof. The first was that of a young man, operated on by his father in London, in 1763, the colour of the cataract being "extremely white." It must here be remembered, that the Wenzels incised the capsule while passing the knife across the chamber. "Before the section was completely finished, a milky substance issued out of the pupil, and escaped with the aqueous humour," leaving the parts behind the iris perfectly clear. On removing the dressing next day, the lens in its natural state of transparency and size was found between the edges of the eyelids. I much question, however, the accuracy of the observation with respect to its bulk. The second case which he has related occurred in Vienna, in 1774, in a young child. In it, the cataract had a "bright white colour." Extraction was performed; and, when the cornea and anterior capsule were divided, a milky fluid escaped with the aqueous humour, and vision was restored. Next day, the crystalline was found lodged between the lips of the corneal section, "transparent, colourless, and rather small." In a note attached by Mr. Ware, the translator of Wenzel, to the foregoing instances, he inclines to the belief that the fluid portion of the cataract was the periphery of the lens dissolved.—(*Wenzel's Treatise on the Cataract*. Ware's Translation, p. 201.)

Nichter, in defining the seat of cataract, says: "It is either the crystalline lens alone, or the lens, the capsule, and the liquor Morgagni together; or it is the anterior part of the capsule, or its posterior part, or the liquor Morgagni simply. I have seen the last only once." But although this opinion was in accordance with the peculiar anatomical notions of his day, he seems to have been well acquainted with what we now know as Morgagnian cataract, and says, a little further on in the same chapter: "It happens now and then, that, as soon as the capsule is opened, a considerable quantity of a milky-coloured fluid flows out, and, soon after, follows a very small lens. The quantity of the fluid, and the uncommon smallness of the lens, render it probable that its ex-

ternal laminae have been dissolved."—(*A Treatise on the Extraction of the Cataract*. English Translation, pp. 4, 7. 1791.) This appears to me the best and most faithful definition of the disease given at that time.

The chief authority on this subject, and that from which most English writers have drawn, is Beer, who, in the second volume of his *Lehre von den Augenkrankheiten*, published in 1817, has given, at page 291, a faithful description of the disease, the best method of diagnosing it, and also an engraving from a drawing made by himself. (Plate III. Fig. 3.) He says it is the very rarest form of cataract, and believed that the original seat of the disease was in the so-called Morgagnian fluid, which became suddenly turbid, the lens and capsule remaining transparent; but that very soon both these structures became opaque. In Beer's cases, the disease was produced very rapidly by the exposure of the eye to the fumes of mineral acids. In one instance, the turbid fluid was formed in a few hours.

Mr. Vetch says that this form of cataract "very seldom exists by itself, being quickly followed by opacity of the lens and capsule."—(*A Practical Treatise on Diseases of the Eye*, p. 119.) With respect to the capsular opacity, I have doubts; and the author does not give any cases of it which came under his own observation.

Dr. Mackenzie says that this "forms one of the rarest kinds of cataract."—(*A Practical Treatise on Diseases of the Eye*, p. 650.) He is not, however, so happy in his description of this disease as in the other parts of his most admirable and truly practical work. The only instance, he observes, "which I have seen, was in a lady, who embarked at Liverpool with her sight perfect, was very sick during the passage to Greenock, and, next day, landed there with a cataract in one of her eyes, such as I have not observed in any other case, and which corresponded to the description of Morgagnian cataract, except that I could see no change in the form of the opacity after rolling the eye." Having seen some cases in which a lens, dislocated by concussion, or a small penetrating wound, became opaque in twenty-four hours, I am inclined to think that the instance just related may be of such a nature. The straining, or violent sea-sickness, may possibly have destroyed the connections between the crystalline and the surrounding parts.

Mr. Middlemore not having seen the disease himself, it is unnecessary to refer to his work.

Mr. Guthrie described the disease in his treatise on the "Operative Surgery of the Eye," p. 246, not under the head of "Cataracta Morgagniana," in which affection he believes the capsule to be "always the primary seat of the complaint," but in the previous paragraph detailing the symptoms of fluid cataract.

Tyrrill tells us, that the fluid cataract is "also occasionally found in elderly persons; when, however, the cataract is rarely fluid throughout, but the circumference alone is liquid, and the centre is firm or hard." "I believe the cataract is rarely if ever formed in a fluid state, but that the change is effected in its consistence subsequent to the loss of transparency in its original structure. All the cases I have met with have been of long standing; and I have never been able to detect anything like this fluid change during the progress of the disease."—(*Practical Work on Diseases of the Eye*, Vol. II. p. 365.)

Mr. Lawrence, who, however, does not give any case of his own, doubts the "separate existence of such an affection," supposing that, in the true Morgagnian cataract, the lens remains transparent, which, however, does not seem to be the opinion of all the early authors who define this form of disease. Dr. Hays, of Philadelphia, in his recent edition of Mr. Lawrence's work, gives an account of the dissection of an eye, the previous history of which was, however, unknown, where the capsule appeared "more convex than natural; renitent, as if distended by a fluid; somewhat opaque, and very firm. While squeezing it, to ascertain what pressure it would bear, it broke, and some yellowish white fluid, resembling thin pus, or milk and water, and equal in quantity to about one-fourth the bulk of the lens, was discharged. The lens was of a light amber colour, somewhat smaller than natural, but perfectly transparent." (p. 620.)

Morgan writes: "Cataract sometimes is of a mixed character, the centre being hard and the circumference soft, or almost fluid; and there is no ding-

nostic mark between this and hard cataract."—(*Lectures on Diseases of the Eye*, edited by J. F. France, p. 179.)

In the 7th Fasciculus of the late Mr. Dalrymple's magnificent work on the "Pathology of the Human Eye," he has faithfully described the disease under the head of "Soft Cataract," in the following graphic passage: "Fluid cataract is met with at all ages, but is a somewhat rare species. It appears to consist of disintegration of the lens, and, when it occurs in elderly persons, the nucleus of a hard lens is often found in the interior of the capsule. This latter investment may or may not be also opaque. When the capsule is entirely transparent, it will generally be seen on dilating the pupil; and if the eye has been a short time at rest, that the colour is not wholly uniform; that at the lowest part the opacity is denser, while a certain degree of milky translucency may be seen at the upper part. If the eye be suddenly rolled about, or rubbed, the opacity becomes general and uniform, but clears in the upper part by rest and subsidence of the more opaque materials of which it will be found to be composed. It is by this means that we may distinguish a fluid from an ordinary soft cataract. On examining the contents of the capsule, when we have the somewhat rare opportunity of doing so, we find the fluid semi-opaque, containing the debris of the lens, which may easily be distinguished by the microscope; also many oil-globules, and some plates of cholesterine. In old subjects, as I have before said, the hard yellow nucleus will be found, having resisted the disintegrating process or softening of the lens."

Mr. Brodhurst, one of the latest writers on the subject of cataract, says: "This form is much more common in brutes than in man; indeed, it is not uncommon in the sheep and in the horse, but it is rare in man."—(*Of the Crystalline Lens and Cataract*, p. 122.)

The foregoing extracts contain the opinions and descriptions of the most esteemed authors in this country on the subject, and the modern French and German works have added little thereto. Those of Professor Siebel and Dr. Desmarres may, however, be consulted with advantage; and from the former learned and observant writer may be expected a special essay on the subject ere long. The following cases which I have operated upon have suggested the present communication:—

Mrs. H., aged 60, had been quite blind for several months, at the time I first saw her in 1847. She had well-formed cataract in both eyes; the only peculiarity which I remarked at the time was the more than usual muddy gray homogeneous colour of the cataracts, and their wanting that peculiar pearly-aceous hue common to gray-coloured cataracts where there is a uniform density. I saw her, however, but once before the operation, as she was very anxious to have it performed soon, in order that she might proceed to the Continent. In the June of that year, I extracted the cataract on the right side. The case was in most respects favourable, the eye healthy, but the patient very timid. The upper section of the cornea was completed with facility. Having allowed a sufficient time to elapse, which I am always in the habit of doing, in order that the patient may recover self-possession, and the eye by such rest lose the spasmodic action which affected it during the first step of the operation, I proceeded to open the capsule, when, on incising this membrane, an opaque fluid of a grayish white colour escaped in a considerable quantity. I then mentioned to the medical gentlemen present, that this was what was termed Morgagnian cataract, and that we should certainly find the solid nucleus of the lens within the capsule. By inserting Daviel's spoon or scoop into the external angle of the wound, making gentle pressure on the eye, and inclining the head to one side, the turbid fluid was eventually evacuated, and the pupil became clear. The dark amber-coloured lens then presented with its upper margin somewhat below the pupillary edge of the iris. Upon making the usual pressure and counter-pressure, the lens did not rise in the ordinary manner, but rather depressed behind the iris, while the clear space above its upper edge enlarged, and the vitreous humour presented. Having made several ineffectual endeavours to extract the lens, particularly by increasing the pressure from below, and finding that on each attempt the vitreous humour carrying the iris before it bulged into the section like a case in which the cornea has not been suffi-

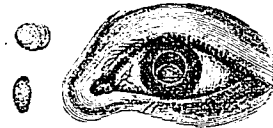
ciently divided, I desisted from any further endeavour to extract by pressure, and resorted to the following expedient: Having allowed some time to elapse, in order that the eye, as well as the patient generally, might become quiescent (a circumstance not sufficiently attended to, but of considerable importance in the management of extractions), I introduced the curette through the section, passed it into the clear space in the upper part of the pupil behind the lens, and then having turned its curved point forwards, fixed it into the back of the lens by pressing it against the iris and cornea, and thus transfixed, I was able with facility to extract the cataract without any loss of the vitreous humour. The lens was small, rather darker than usual, somewhat flattened, but perfectly smooth on the surface. This case recovered without any inflammation or other untoward circumstance, and the vision subsequently acquired was most perfect. This patient now resides at Liège, and is able to read and write as well as any person of her time of life.

The next case occurred shortly after, in the person of an old woman, who presented at the hospital on account of blindness, which, she said, had been coming on for a couple of years. The left eye had previously suffered from internal inflammation, and the pupillary edge of the iris was completely attached to the front of the capsule of the lens, which was quite opaque. Upon the right side there was a muddy, gray opacity behind the pupil, which advanced flush up with its edge, so as not to leave the usual shadow seen in most cases of cataract. Upon dilating the pupil, a dark orange-coloured cloud, which altered its position from time to time, but finally subsided towards the bottom of the capsule, was then plainly discernible. When the eye had been for some time at rest, the amber-coloured nucleus of the lens having fallen forwards against the capsule, confirmed the diagnosis that this was a case of Morgagnian cataract. In this instance, I determined to try the effect of opening the capsule, and allowing the opaque fluid or broken down lens to be absorbed before I proceeded to extract the nucleus. I therefore introduced a needle through the cornea, and freely lacerated the capsule, which was quite transparent. The opaque matter spirted into the anterior chamber, rendering the aqueous fluid turbid and of a milky hue. After a short time, the colouring matter gravitated to the bottom of the chamber as if it was not quite miscible with the fluid of that cavity, and then the dark amber-coloured lens could be distinctly seen behind the pupil, which had contracted during the operation. Violent inflammatory action, characterized by intense orbital pain and some irritability of stomach, ensued during the night, for which the patient had to be cupped, and get a full opiate. In the course of a few days all these symptoms subsided, the redness disappeared, and the patient left the hospital. At the end of six weeks she was readmitted. Having made the upper section of the cornea, I extracted the lens by simple pressure in the ordinary manner. No inflammation followed, and the woman recovered perfect vision, but died of cholera about a year afterwards.

With respect to the pain and sickness of stomach which ensued on giving exit to the fluid portion of the cataract in this case, Mr. Dalrymple's work, already alluded to, contains the following accurate observation: "There are some peculiarities which belong to this variety which it is necessary to mention. If an opening be made into the capsule, as in the operation of keratonyxis, we see the opaque fluid escape, and render turbid that of the anterior chamber. In a few hours after the operation, the patient is seized with nausea and violent vomiting, and with intense ocular or frontal neuralgia. (In one case, I remember to have seen the vomiting and neuralgia continue almost unremittingly for three days.) Upon what circumstance these phenomena depend, is wholly unknown to us. That it must, however, be closely connected with the poisonous presence of the contents of the capsule in a cavity in which absorption and reproduction are always going on, does not admit of a doubt: for, if such a cataract be removed by extraction, in which case the capsule generally escapes entire, no such state follows." In this latter observation, however, I cannot agree, as the capsule was not extracted in any of the four cases on which I have operated.

The third case was that of a female aged 50, from the West of Ireland, who

was admitted into the hospital in 1851, with well-formed cataract in both eyes. I had seen this woman in 1847, when there was an opaque nucleus in both lenses; but, as she could then see sufficiently well to follow her ordinary occupations, I advised her to defer having any operation performed until vision was more impaired; so that, in this case, there was an opportunity of examining the eye in an early stage of the disease, and of observing that the opacity commenced in the centre of the lens; its periphery and the capsule were quite clear. On the right side, when last admitted, there was evident hard cataract. On the left, the cataract presents a mixture of two colours, which, when the eye has been at rest and the pupil dilated, can be distinctly seen as a slate gray above, and a well-marked amber tint below. When the head is moved rapidly about, or the eye rolled or rubbed with the finger, these appearances alter, the amber colour appearing to have mixed with the gray. After a time, they again separate, and the shape of the solid nucleus of the lens can be distinctly seen below, as shown in the accompanying wood-cut taken from a coloured drawing made at the time: the line of demarcation between the solid opaque body and



the supernatant fluid being distinctly marked, and the semicircular mass proving its solidity. The anterior capsule was perfectly clear, but apparently in contact with the iris; it did not, however, bulge that membrane forward into the anterior chamber, as is stated by some writers to be a symptom of this form of cataract. The sclerotic was traversed by a number of long tortuous vessels, which, coming up from behind, dipped through it at about the eighth of an inch behind the cornea, particularly at the upper portion, where their entrances were marked by dusky olive-coloured spots, caused by the pigment beneath bulging into apertures enlarged by the previous distension of these congested vessels. These spots appeared chiefly upon the superior hemisphere.

Upon the 21st of May, I passed a needle through the nasal side of the cornea, and, turning its flat cutting edge towards the lens, made a crucial incision of the capsule, when the grayish fluid contained within that envelop immediately spirited out, and, mixing with the aqueous humour, rendered the whole anterior chamber turbid. After some minutes the eye was again examined, when the milky fluid was found to have gravitated to the bottom of the chamber, leaving the upper half clear; and in the lower angle formed between the cornea and iris could plainly be seen the *debris* of the disintegrated lens somewhat resembling an onyx. While opening the capsule, I could plainly feel the hard nucleus of the lens, which could afterwards be seen of an amber colour, occupying the pupil. Upon looking at the eye in profile, the cut portions of the capsule standing out into the anterior chamber were plainly discernible. The patient was removed to bed, and an opiate administered, having had, before she left the operation-theatre, the usual caution given to her—to inform the nurse if she experienced pain. During the night violent pain in the eye, attended by some sickness of stomach and retching, came on. The patient, however, made no complaint, as she was afraid of being bled or cupped, which she was aware, from the cases around her, was the usual practice on the accession of inflammation. It was not, therefore, until the afternoon of the following day that her state was discovered, when the resident was called to see her, on account of the violent retching which she then suffered from. Upon examination, all the symptoms of violent inflammation presented; the upper lid was red and œdematous; there was intolerance of light, mucous discharge, and profuse scalding lachrymation. Upon opening the lids, an extensive chemosis of the conjunctiva of a copperish red colour, shining, and apparently caused by the infiltration of

serum into the sub-conjunctival cellular tissue, bulged forward and overlapped the lower edge of the cornea. The cornea itself was of an ashy-gray colour, had lost its transparency, and looked like a piece of muffed glass. Previous to my arrival, several leeches had been applied to the temple and over the malar bone, as the woman obstinately refused to allow herself to be cupped or bled. In this unpromising state of things, I determined to evacuate the contents of the anterior chamber, and so lessen the pressure which threatened the destruction of the cornea. I accordingly, in the presence of Dr. Kirkpatrick and Mr. Thornton, the resident, introduced Walker's grooved knife obliquely upwards through the lower portion of the cornea, and thus rapidly evacuated the entire contents of the anterior chamber, consisting of a muddy gray fluid. I had the extreme satisfaction to observe, that almost immediately the brilliancy and transparency of the cornea were restored, and the iris and lens could be plainly seen, the latter partly dislocated and bulging the edge of the pupil upwards and forwards. The patient experienced immediate relief from the intense pain and feeling of distension from which she had suffered for many hours previously. I likewise excised with a curved scissors a portion of the chemosed conjunctiva, and thus allowed the fluid contained within its bag to become expressed. By this means, also, some slight local depletion was induced, and the congested vessels relieved. The effect, in this case, was almost magical, as I assured myself, before the operation that the grayness of the cornea was not caused by the colour of the fluid behind it, but was induced by pressure such as we may produce in an eye removed from the subject by squeezing it in the hand. Some more leeches were applied, extract of belladonna was plentifully smeared round the brow and orbit, and, when the leeches had ceased to bleed, a full opiate was administered.

Upon the 23d, the œdema of the lids and the chemosis had quite subsided; the redness of the globe was lessened considerably, and the patient was free from pain. Upon the 6th of June, the conjunctiva and sclerotic having resumed their natural appearance, I extracted the hard nucleus of the lens, which, as already stated, was bulging forward through the upper segment of the pupil. Some difficulties presented, owing to the irritability of the eye, the timidity of the patient, and the circumstance of the anterior chamber being so much encroached on by the distorted lens as to prevent a fair section of the cornea being made in the usual manner. I made the upward and outward section, and slightly enlarged it with a scissors. Upon pressure being made in the usual manner, the lens protruded between the lips of the incision; it was then transfixed with the curette and removed. There was no gush of vitreous humour, but the fluid which flowed from the eye, when felt between the fingers, was sticky and glutinous, showing that the vitreous humour was fluid, as I believe frequently happens in cases of Morgagnian cataract. The lens was of a dark amber-colour, oval, smooth, and rather more polished on its surface than cataracts usually present; the anterior surface somewhat flat, and the posterior rather more convex than natural, as shown in the previous illustration.

This case went on well; the woman recovered rapidly, without any untoward symptoms, and returned to the country seeing perfectly, and with a circular and mobile pupil.

The fourth case occurred during the present year in the person of a man aged 65. He was blind of both eyes; in the left there were evident traces of previous inflammation; the iris was altered in colour and structure, and its whole pupillary margin firmly attached to the capsule of the lens. On the right side the eye was more healthy, the iris natural, the pupil mobile and unattached; the lens was opaque, and of a peculiar uniform dull, homogeneous, drab colour. I suspected that this was a case of partially fluid cataract, but it did not at any time, even when the pupil was artificially dilated, present the appearance of Morgagnian cataract. In order to test the consistence of the lens, I introduced a fine needle through the cornea, and, having incised the capsule, found my suspicions confirmed, for a muddy, brownish-coloured fluid immediately rendered turbid the aqueous humour. Having already had experience of the consequence of allowing this irritating material to remain in the anterior chamber, I immediately allowed it to escape by introducing the grooved

knife as in the former case. Upon the chamber becoming clear, the brown lens was then seen completely filling the pupil. Six hours after the operation, violent pain came on, attended with the usual symptoms of internal inflammation, and accompanied by vomiting. Upon examining the eye, the aqueous fluid was found to have been regenerated, and there was no dislocation of the lens. The usual treatment was resorted to, consisting of local depletion, opiates, camphor, and the application of belladonna to keep the pupil dilated and prevent adhesion. In the course of a few days, a secondary attack of inflammation, chiefly engaging the sclerotic and iris, came on, for which tartarized antimony, calomel, and opium, in small and frequent doses, had to be administered. Under this treatment and occasional blistering, the iris resumed a healthy appearance in about two months. At the end of the ninth week, I proceeded to extract the lens, which proved to be of the usual diameter, but thinned from before backwards, and, like that in the third case recorded, was remarkably smooth and polished on its surface. I made a full section of the upper segment of the cornea, on completing which a greater quantity of fluid was evacuated than could possibly come from the anterior chamber. It was also a glutinous consistence, and continued to pour from the eye each time the pressure was made to evacuate the lens, evidently showing that the vitreous humour was fluid. I therefore passed the curette underneath the pupillary edge of the iris and behind the lens, and, by turning its curved point forwards, fixed it in the lens, and drew it forth without difficulty—a manoeuvre to which I resorted in the first case as previously described. This man recovered without a single bad symptom, and returned to the country with very good vision.

The foregoing cases speak for themselves, and, having already occupied so much space in their recital, I do not think it necessary to offer many observations upon them. The chief point of practical importance which they inculcate is that of extracting at once, in all similar cases; as the presence of the fluid portion of the cataract in the anterior chamber, for ever so short a time, seems to produce a most deleterious effect.

54. *Osseous Cataract*.—It has long been known to the profession, that the injurious effects of a foreign body embedded in the eye are not confined to the organ itself, but that the other eye is liable to be impaired, or even destroyed, by sympathetic inflammation. It may not, however, be so generally known, that the textures of the eye itself, under certain pathological conditions, may act as foreign bodies, producing the same distressing symptoms, and requiring operative means for their removal. This fact is well illustrated by a case which lately occurred in the hospital, under the care of Dr. Taylor.

The patient, a man 35 years of age, received a punctured wound of the eyeball, fourteen years ago; inflammation ensued, vision was totally lost, and the eye gradually became atrophic. He suffered no further inconvenience until a few months previous to his admission, when the injured organ became exceedingly troublesome; there was constant conjunctival inflammation, intolerance of light, spasm of the eyelids, and frequent and severe attacks of pain of a neuralgic character. His chief source of anxiety, however, was the condition of the other eye, the sight of which had become so weak as to prevent his working for more than a few minutes at a time.

The injured eye was about one-fourth less in size than its fellow, and soft and flaccid to the touch; the cornea was dull and glassy-looking, and did not measure more than one-fifth of an inch in diameter; the conjunctiva was covered with large, tortuous vessels, through which a faint pink ring could be seen encircling the cornea; the spasmodic closure of the eyelids rendered it difficult to obtain a clear view of the pupil, but a cataract, of a dull straw colour, could be seen lying in the posterior chamber, and pressing apparently against the iris.

Various palliative remedies were tried, but without affording permanent relief, and, as the vision of the other eye became rapidly weaker, the patient willingly consented to have the cataract, which was evidently the source of the irritation, removed.

The operation was accordingly performed on the 14th July. After putting

him under the influence of chloroform, Dr. Taylor divided the cornea by the upper section, as in the ordinary operation for extraction, and, as the opening thus made was very limited, owing to the atrophied condition of the cornea, enlarged the incision on each side, through the sclerotics. On introducing the curette, the instrument grated as against a piece of stone. The cataract was firmly adherent to the subjacent parts; but the iris was free. Pressure had not the slightest effect in dislodging it; it required considerable manipulation and no small degree of force before it could be removed by a small but strong hook; it came away entire, and without any escape of the vitreous humour.

The man suffered a good deal of pain during the first night, but not afterwards; the wound healed rapidly; the irritation completely subsided in the other eye; he left the hospital in a week, and three weeks after the operation he was again at work.

The cataract was of a straw colour, semi-globular in form, smooth and regular in front, rough, tubercular, and flattened posteriorly where it had been adherent. Here a small portion of the lens in a softened condition was visible, and when this was removed the osseous deposit was found to have involved not merely the capsule, but the greater part of the lens also, which was converted into a solid mass of stony hardness. This condition of the lens is of very rare occurrence. Mr. Wardrop, Mr. Tyrrell, and M. Desmarres have each met with one instance, but in every other case of osseous cataract, so far as we are aware, the change has been confined exclusively to the capsule, forming a thin shell, which, by breaking under the instruments employed for its removal, adds to the difficulty of the operation.

Our limited space will not permit of any further remarks upon several interesting points in the pathology and treatment of osseous deposits within the eye; but we cannot conclude without calling especial attention to the firmness with which the lens adhered to the subjacent parts in this, as well as in several other instances recorded in the journals, a complication not alluded to by any of the systematic writers, with the exception of M. Desmarres, and one which might occasion considerable embarrassment to an operator ignorant of the possibility of its occurrence.—*Med. Times and Gaz.* Feb. 26, 1853.

55. *Abscess within the Orbit, producing Chemosis, by which the Vitality of the Cornea was destroyed, and the Eye lost—Secondary Deposit of Pus in the Brain, causing Death.*—The patient, a tall and slender girl, 15 years old, was sent to Mr. Walton, by a surgeon in the city, on the 17th of December last, in the following state: There was an abscess, but not a large one, pointing just under the upper and inner angle of the left orbit. The palpebre were a little swollen, the upper one somewhat shortened, and the tarsus elevated, from the effects of former abscesses. The eyeball was entirely surrounded by a very prominent chemosis, that covered all the cornea, except a small central bit, which was quite bright. Vision was unaffected, but there was intolerance of light, caused by the constant exposure of the eye, for the lids could not be closed on account of the injured palpebra and the chemosis, and to remedy which she wore a bandage. There was a little, but only a very little, purulent secretion from the conjunctiva.

The history runs thus: Four years ago, the girl had an abscess at the upper part of each orbit; they burst, and healed after discharging a few weeks. There were several recurrences of these; the last interval being a duration of about three months. Now, for the first time, only one orbit is the seat of supuration.

Mr. Walton pointed out to the mother of the girl the necessity of the abscess being opened, and the chemosis freely divided, and the imminent danger to the eye in case the latter was not executed. Such treatment, however, was positively objected to by her.

On the 21st, three days after, she was again brought to Mr. Walton, in a very debilitated state; when he last saw her she was not feeble. The abscess had burst, and the chemosis had subsided a little, but, unfortunately, the cornea had become opaque and ash-coloured. Being in great pain, she now desired to have anything done that might relieve her sufferings and restore her

sight. Mr. Walton divided the chemosis, to afford a chance, if, indeed, any remained, of saving the cornea; but its vitality was lost, and the greater part of it separated while some blood was being wiped from the surface of the eyeball, leaving the iris and the lens exposed. He also enlarged the abscess aperture. In four days the pain in the eye had ceased, and the chemosis had nearly subsided, the abscess discharging all the while. The poor girl now thought that her sight would be saved, for she could discern large bodies; but this respite of vision was soon lost by the pupil closing. She continued to improve in health, and the abscess secreted less.

On the 1st of January she complained of occasional slight headache; on the 3d, she kept her bed, yet took her food with a tolerable appetite. Her father went to fetch her some drink, at her own request, and when he returned in a few minutes, she was dead. Mr. Walton obtained leave to examine the head, but that only, and has kindly allowed us to make the following condensation from his notes:—

Post-Mortem Three Days after Death.—The brain was first examined. The surface, that is, all which was visible by the removal of the calvarium, was not abnormal, nor were its membranes unhealthy; but within the centre of the anterior lobe of the left hemisphere, was a deposit of about a teaspoonful of pus, the cerebral matter around being slightly broken down. Attention was carefully directed to ascertain if there was any communication between this and the abscess in the orbit, but none was detected. The parts passing through the several orbital foramina were perfectly healthy, and the only other indication of disease within the skull was the readiness with which the dura mater could be separated from the orbital plate of the frontal bone. The orbit was now inspected. Between the periosteum and the roof of this cavity the original abscess was found to be situated; less pus was here than in the brain. The several tissues in the orbit were perfectly normal. The eyeball was partly collapsed, but its tunics were natural. The entire portion of the upper wall of the orbit, including the superciliary ridge, presented the appearance that is characteristic of chronic inflammation of bone, and the superciliary ridge of the other orbit exhibited the same, but in less degree.

The following points in this peculiar case demand attention:—

1. The symmetrical appearance of the primary affection, each orbit having been attacked alike; this being significant of the constitutional origin of the complaint.
2. The purulent, or secondary deposit, as such collections are generally called, within the brain; the principal peculiarity being the rareness of such an occurrence in this organ.
3. The mildness of the cerebral and general symptoms in conjunction with so great a lesion of the brain, for there was almost an absence of constitutional disturbance—if the report of the mother be accredited—there being no febrile manifestations, and but little depression, after the severity of the acute attack of suppuration in the orbit had subsided, and at the time when the cerebral disease was going on; and but slight headache, without any paralysis, and without sickness or mental aberration.
4. The production of chemosis, from abscess within the orbit, to a degree sufficient to destroy the cornea, and by that the eye. This, bearing as it does on what may be termed the surgery of the case, admits of several practical observations.

The cases in which chemosis is usually injurious, are those of purulent ophthalmia, whether arising from inoculation, injury of a mechanical nature, atmospheric, or other causes; and in those the conjunctiva seems to be the structure primarily affected. Here, however, is a remarkable exception; the conjunctiva was raised around the cornea, and partly covered it, as a secondary result of an abscess in its vicinity. Perhaps a similar effect is produced in those instances of destruction of the eyeball, in phlegmonous erysipelas of the head and face. The eyelids being closed by their tumefaction, precludes a sight of the state of the eye, and the changes that are being effected in it.

The opportunity of dissecting the eyeball in the case under consideration, whereby all its proper tunics, except the cornea, was discovered to be healthy,

demonstrates, in the most direct and unmistakable manner, the fact that the destruction of the organ was directly produced by the mechanical interference with the nutrition of the cornea by the chemosis, its supply of nutrient material being partly or entirely arrested, a result which must always supervene when chemosis arrives at a certain density, for it is the nature of the fluid effused in the sub-conjunctival areolar tissue on which the effect of the chemosis depends. More effusion of serum, although the conjunctiva may be considerably raised, matters nothing. Very different is it, however, when the effusion is of a fibrinous nature, the result of an attack of acute inflammation.

Although, through the perverseness of the poor girl, the period for the effective treatment of the ocular disease was allowed to pass, and there is no scope for clinical remarks concerning the result of the measure adopted—namely, that of incising the conjunctiva—it may not be out of place to describe Mr. Walton's method of executing this, the most effective manner, as modern practice shows, of dealing with that dangerous state of the eye.

Mr. Walton employs a small curved knife, as he considers a straight one insufficient for the purpose, because it cannot be carried effectually through the chemosis, that is, through the entire extent, without wounding the lid, and, perhaps, the eyeball also; and it should be borne in mind, that the result of the operation mainly depends on the manner of its execution.

The eye is fairly opened, the upper lid raised with the lid retractor by the operator, who stands behind the head of the patient, the lower depressed by an assistant. The curved knife, held vertically, is introduced at the edge of the chemosed conjunctiva (Mr. Walton usually divides the lower part of the chemosis first), and carried along the surface of the cornea and the sclerotic to the sinus of the lid, the handle then depressed, so that the palpebral chemosis may be reached by the instrument; this is then traversed by the blade, and the whole divided by an outward stroke. Three or four incisions are thus made. The division of the upper portion of the chemosis is not so readily effected, in consequence of the different construction of the lid, and the necessity of using the retractor; but the impediment is readily overcome, by applying the retractor first on one side of the lid, to make room for the knife, and then shifting it to the other. An active and intelligent assistant is required to use the sponge frequently, that the operator may have a constant view of the course of the knife; and, unless the eyeball is freed from blood, it is not possible to enter the knife safely or correctly.—*Med. Times and Gaz.* Feb. 26, 1853.

MIDWIFERY.

56. *The Esquimaux Female Pelvis*.—Dr. JAMES STRUTHERS exhibited to the Edinburgh Obstetrical Society (April 14, 1852), the pelvis of an Esquimaux woman which he had received from Mr. George C. Pirie, of Dundee, who obtained it last summer while acting as surgeon to a whaling vessel. It was found near Cape Hooper, on the coast of Davies' Straits, in latitude 68.6 N., longitude 64.36 W., under a cairn of stones—the usual mode of burying there. As a specimen of the pelvis of this division of the Mongolian race, it is interesting from its rarity, but chiefly from the unusually large dimensions of the brim, cavity, and outlet.

In its form, it approaches the square, the distinctive character, according to Weber, of the Mongolian pelvis; the transverse diameter exceeding the conjugate by $1\frac{1}{2}$ inch.

The brim is 164 inches in circumference, being 2 inches more than in a large European pelvis. The diameters of the brim are:—

Transverse,	.	.	.	6 inches
Conjugate,	.	.	.	4 $\frac{3}{4}$ "
Oblique,	.	.	.	5 $\frac{5}{8}$ "

The first being $\frac{5}{8}$, the second $\frac{3}{4}$, and the third $1\frac{1}{8}$ inch larger than in the standard assumed by Ramsbotham.

The diameters of the cavity are:—

Transverse,	.	.	.	5 $\frac{1}{2}$ inches.
Conjugate,	.	.	.	5 $\frac{1}{4}$ "
Oblique,	.	.	.	5 $\frac{1}{2}$ "

An increase over the standard of 1 inch in the antero-posterior, and of $\frac{1}{2}$ inch in the two other diameters. The outlet is also very capacious; the transverse diameter being $5\frac{1}{4}$ inches; the conjugate about the same; while the pubic arch is unusually wide. The depth of the cavity is much the same as in the European pelvis.

This being the only specimen of an Esquimaux pelvis that Dr. S. has had an opportunity of examining, no general deduction of course can be drawn as to the pelvis of the Esquimaux being larger than that of the European. It is worthy of observation, however, that parturition among the Esquimaux, whatever be the cause, is by all accounts much more rapid than with us—so rapid, indeed, that, after making all due allowance for the child being smaller, which is the case, and for the half savage condition of the natives, we can scarcely avoid the inference that something may be due to the maternal passages being wider in the one race than in the other. Crantz, in his *History of Greenland*, states that parturition among the Esquimaux is both rapid and easy; and Mr. Pirie, during his residence there, received many accounts to the same effect. Mr. Pirie also collected some curious information as to the manner in which the accouchements are conducted, the leading feature of which is that the whole process is left entirely to nature. Till within a few hours of labour, the woman goes about her usual duties. As soon as she feels unwell, she retires to a skin hut built for the purpose, which is so small as to confine her almost entirely to the recumbent posture. No one is allowed to be present while labour is going on; and the woman, it is stated, generally makes her appearance within the hour, carrying the child in the hood attached to her dress.

It is the general belief that the child is not separated from the placenta until the latter is expelled, and that the division is effected by the mother gnawing through the cord. The Greenland women, according to Crantz, are not very prolific, seldom having more than three or four children, between each of which there is generally an interval of three years. When told of the fecundity of Europeans, they compare them contemptuously to their dogs. Miscarriages, twins, and monsters are very rare; and scrofula and rickets are almost unknown. The children subsist for three or four years solely on the mother's milk; there being no other nourishment suitable for them. If another child be born before the mother has ceased nursing (not an uncommon occurrence), the latter frequently dies in consequence of being deprived of its supply of milk; and should the mother die while the child is young, it, as a necessary consequence, does not long survive her.—*Monthly Journ. of Med. Sci.* Aug. 1852.

57. *Indian Hemp as an Oxytocic.*—Dr. JOHN GRISON has been induced, by the reports of Drs. Churchill, Simpson, and Christison, to try the powers of the Indian hemp as an oxytocic. He has employed the tincture of cannabis indica (24 grs. ext. to ℥j) in sixteen cases of labour. "In nine of these," he says, "though given to the extent of ℥ijss, in separate doses, of 25 and 35 drops at a time—in some in quick succession, in others at longer intervals—I could not perceive any increased uterine action, nor the slightest physiological change in any one way during labour or afterwards, with the exception of one instance of sleep (much required at the time) in a lady, far from strong, confined of her third child, and much exhausted by inefficient throes, in whom the third ℥ss dose completely arrested the pains and induced sleep, which continued for an hour, when she awakened refreshed. Labour then set in in earnest, chloroform was given, and the child was speedily born. These nine cases made good recoveries.

In the seven cases in which the tincture of hemp succeeded so well with me, five were cases of first confinement, of satisfactory, though very slow, labour, and phlegmatic temperament. I have noticed the contractions acquire great increase of strength and frequency immediately on swallowing the drug, and have seen four or five minutes elapse ere the effect ensued; and if none was

induced within the latter space of time, I have not observed its effects at all afterwards, notwithstanding repeated doses. In these few cases, I had opportunities of giving it from the time when the os uteri would admit the point of my finger till the expulsion of the child. Judging from experience, I believe that, in appropriate cases for the use of this stimulant, and when effectual, it is capable of bringing the labour to a happy conclusion considerably within a half of the time that would otherwise have been required, thus saving protracted suffering to the patient, and the time of the practitioner.

I have not observed it to possess any anæsthetic effects. I have used it in two cases along with the inhalation of chloroform, and I did not observe that that agent interfered in any way with its action.

When the effects of the hemp were subsiding, I have been able to recall and keep up "the good pains" by the addition of ten drops given from time to time. I consider the expulsive action of the cannabis to be stronger than that of the ergot, but less certain in its effect; and it has the advantage over the ergot, of usefulness in the early stage of parturition. I believe that the previous ineffectual administration of the hemp does not interfere with the after exhibition and full working of the ergot.

Such are my brief observations on the new and interesting use to which Bang, or the *Hachisch* of India, has been put. In the few cases in which I thought its administration safe, and not counterindicated by malformation, etc., you have given the result of those in which this effect was, and was not, displayed. I cannot conclude these remarks without entering my dissent against the use of uterine medicinal stimuli in general, on account of the frequent difficulty of accurate conception of relative dimensions of parts, etc. Yet all obstetricians must acknowledge that, in many cases, such stimuli are indispensable; and to be possessed of one capable of so early application, is decidedly a matter of much importance. I would also notice that, in labour, whether the cannabis shows its peculiar effect on the uterine contractions, or not, there seems, as in tetanus, etc., to be a very great tolerance of the drug—nor have unpleasant consequences, so far as I have seen, appeared afterwards; and, whilst it is acknowledged as a powerful controller of inordinate muscular spasm, it is equally in many cases, a powerful stimulant of the uterine muscular fibre in labour, if not in the unimpregnated state.—*Monthly Journ. Med. Sci.* Aug. 1852.

58. *Observations on the Induction of Premature Labour before the Seventh Month of Pregnancy.* By ROBERT LEE, M.D. (Proceedings of Royal Medical and Chirurgical Society, Feb. 5, 1853).—In the year 1812, in the third volume of the *Transactions* of the Society, Dr. Merriman had published a paper entitled "Cases of Premature Labour Artificially Induced in Women with Distorted Pelvis, to which are subjoined some Observations on this Method of Practice." The author thought it significant that in thirty-two volumes of the *Transactions*, embracing a period of forty years, there did not occur the history of a single case to illustrate this important rule of practice; while in these volumes there were reports of ten cases of Cæsarian operation. Of the safety, efficacy, and morality of inducing premature labour, in conformity with the rules inculcated by Dr. Merriman, the author thought most British and some foreign practitioners were convinced; but in respect to the induction of premature labour before the seventh month and in first pregnancies, to obviate the danger of craniotomy and the fatal effects of the Cæsarian section, in cases of great distortion of the pelvis, little had been said by writers on midwifery. To justify the practice, which the author regarded as equally safe, efficacious, and moral, before as after the seventh month of utero-gestation, and in a first as in any subsequent pregnancy, he submitted the history of a successful case, which was attended with peculiar complications and formidable difficulties.

In October, 1849, with Mr. Booth, of Queen Street, Westminster, he saw Mrs. S—, who had been in labour forty-eight hours, and whose pelvis was distorted in the highest degree from *mollities ossium*. After perforating the head, which had not entered the brim of the pelvis, and by tearing in pieces the bones with the crotchet, delivery was accomplished after two hours' violent ex-

ertion. The partially dilated state of the os uteri greatly increased the difficulty and danger of the operation. The patient recovered without any unfavourable symptom. In December, 1852, the author learned from Mr. Booth that the patient was again pregnant; and in the fifth month, some diagnostic symptoms of pregnancy being absent, any interference was postponed for another month. In January, 1853, the movements of the fœtus could be distinctly felt, and the necessity for immediately attempting to induce premature labour was obvious and urgent. The great distortion of the pelvis (the tuberosities of the ischia were almost in contact, and the sacrum projected forward so as nearly to touch the front of the pelvis) presented unusual difficulties, seen in reaching the os uteri for the purpose of introducing the stilet catheter to puncture the membranes. After a time, the fore and middle fingers of the left hand were passed into the vagina, and the anterior lip of the os uteri was touched with the tip of the forefinger; the instrument was then guided into the cavity of the uterus, and the membranes punctured. The liquor amni continued to flow till the morning of Friday, the 7th of January, when labour pains came on. At 2 P.M. the os uteri was so much dilated that the points of two fingers could be introduced, and the nature of the presentation ascertained. It was not the head, but whether shoulder or nates could not be determined. At 7 P.M. the right hand was hanging out of the external parts, and the shoulders and thorax had sunk deeper into the pelvis. On a careful examination, it was found that the tuberosities of the ischia had been pressed considerably apart, the short diameter of the outlet being thus increased; and there was little doubt but that the bones at the brim had also yielded somewhat to the pressure. The shoulder being brought down as much as possible, the viscera of the thorax were removed by the crotchet; and after fixing its point in the spine as near as possible to the pelvis, after strong traction, the nates and lower extremities were drawn through, and the other superior extremity soon followed. But little difficulty was experienced in crushing or extracting the head. The placenta soon followed. Three weeks after the delivery, the author received a satisfactory communication from Mr. Booth, stating that the patient had progressed very favourably.

Dr. LEE said that his object in narrating the case was to bring under the consideration of the Society the propriety of inducing premature labour, in certain cases, before the seventh month of pregnancy, to prevent the necessity of resorting to other and dangerous operations. With respect to the production of premature labour after that period, full discussions had taken place. With regard to the question put by the President, he might remark that it was most difficult to determine the exact measurement during life, but that he had never seen a pelvis with a less diameter than in the present case; and after this he felt confident that if premature labour was induced before the seventh month, no case could occur in which delivery could not be effected. In this case, also, it might be remarked that the diameter of the pelvis had been increased by the pressure of the head of the child, in consequence of the bones being affected by mollities. This might reasonably be expected to occur in cases of a similar kind. He wished to know if any one objected to the course of proceeding which he had recommended previous to the seventh month, to prevent the necessity of craniotomy, or of the Cæsarian section. He might here remark that he had the best reason to believe that one fatal case of Cæsarian section had occurred since the discussions on that subject before the Society; and this, too, in an instance in which it would not have been so difficult to effect delivery as in the case before the Society. That operation, however—he meant the Cæsarian section—had not been recorded.—*Lancet*, Feb. 19, 1853.

59. *Induction of Premature Labour in Cases of Deformed Pelvis.*—Dr. ARTHILL read a paper on this subject to the Dublin Obstetrical Society. He drew the attention of the Society to the old methods of induction, and enumerated the various objections to each of these modes. He then detailed a case in which the douche bath (after the manner of the Vienna Lying-in Hospital) was successfully used. The case was that of a woman four feet and a half in height, and greatly deformed from angular curvature of the spine, the result of caries

of the vertebrae, from which she had suffered when twelve years old. The curvature included the last dorsal and all the lumbar vertebrae; and there also existed an appreciable diminution in the pelvic space. In September, 1849, she was admitted into the Rotundo Lying-in Hospital for her first confinement, when it was found necessary to lessen the head, after a rather protracted labour. In September, 1850, she was again admitted, and this labour was but a repetition of her first. It was then explained to her that she could not give birth to a living child at full term, and she was recommended that, if she again became pregnant, she should come into hospital when she was seven months gone with child, and submit to the induction of premature labour. Accordingly, in June, 1851, she again presented herself in the seventh month of gestation, but before any steps could be taken her husband removed her, having been told that if she submitted to any operation she might die; so that she was lost sight of until the 26th of August following, when she was brought into hospital in strong labour, and again for the third time the crotchet had to be used. On being discharged after her recovery, the necessity of her presenting herself at the termination of the seventh month (should she again become pregnant), was strongly urged upon her; and she acted according to this advice, for she came to the hospital on the 10th of September, 1852, being seven months pregnant. It was now determined to try Kiwisch's method of induction, the douche bath. The apparatus used in this case was a tin vessel, capable of containing two gallons of water, and to this was affixed a flexible tube, furnished with a stop-cock, terminating in a bone nozzle about five inches in length. The vessel was raised about five feet above the bed on which the patient lay supine, the pipe of the tube was introduced into the vagina, the stop-cock turned, and the stream directed against the os uteri by means of the index finger inserted along with the nozzle. Saturday, the 18th of September, was the date of the first application, and even this seemed to produce a marked effect, for, on examination immediately after, the os uteri felt soft and relaxed. The douche was repeated, morning and evening, regularly, until the following Friday (except on Wednesday night, when the tube by some accident got out of order). After the second application, the os began to dilate, and continued to increase a little in size on each application, until after the sixth douche, when it had attained the magnitude of a half-crown, but then it ceased to enlarge. On Friday afternoon, having been subjected twelve times to the douche, she complained of pain in her back, and asserted that she felt certain her labour was approaching. Next morning, at 11 o'clock, the pains came on regularly, though feebly; at 7 P. M., the membranes ruptured, the os being fully dilated, and the pains grew most powerful; the head gradually descended into the pelvis until 9 P. M., when it almost rested on the perineum, but, although uterine action was strong, it ceased to advance further; and at 11 o'clock, no progress having been made for two hours, she was delivered by the forceps (while under the influence of chloroform) of a small, living female child about the seventh month. The two first days it had to be spoon-fed, but afterwards it took the breast freely. The mother recovered without the slightest drawback, and she and the child went out well on the ninth day. Dr. Atthill said that, comparing this case with those given by Dr. Arneth, of Vienna, it appeared that it required the exact number of douches (viz., twelve) to bring on labour, which he found to be the average. The height from which the water flowed was, however, much less than that which he directed; and Dr. Atthill consequently considered that any great height was unnecessary.

The result of this case Dr. Atthill thought most satisfactory, and to the method of induction he considered there could be no valid objection, the worst result being failure, and that this was very unlikely to occur, for, out of the six cases recorded by Dr. Arneth, in only one did the douche fail. Dr. Atthill preferred this mode of induction to any of the other plans recommended by authors, because no possible injury could be done by the employment of the douche bath to either mother or child; and in its application it was simple in the extreme. He concluded by remarking, that, since writing the foregoing paper, he had seen the details of a case in which the douche had been successfully applied by Dr. Tyler Smith, of London. [See preceding Number of this *Journal*, p.

249]; and the only difference that existed in Dr. Smith's case from that just related was, that alternate douches of hot and cold water were used by Dr. Smith; and that this might have been the reason why only five applications were necessary; but that this fact was by no means proved, for in one of Dr. Arneth's cases only two were required. Dr. Atthill considered, however, that it would be worth while to test the fact by further observations.

Dr. CURRIE remarked, that Dr. Simpson, of Edinburgh, was in the habit of using effectually a simple form of syringe for such purposes, which he would consider preferable to the syphon douche, as being more simple and more easily applied; it generally brought on labour after four, five, six, or eight applications.

Dr. M'CUNROCK stated, that the only objection which, in his opinion, could be urged against this method of inducing premature labour was, the facility, certainty, and safety with which it could be made use of for criminal purposes, were it generally known to the public.—*Dublin Quarterly Journal*, Feb. 1853.

60. *On Degeneration of the Placenta at the End of Pregnancy.* By ROBERT DAVITT, M. D. (Read before the Royal Medical and Chirurgical Society, Jan. 25).—The subject of degeneration of the placenta had been already brought under the notice of the profession by Dr. Robert Barnes, but before the real value of this subject of investigation could be estimated, the author thought the following questions should be answered—viz., first, how far, and under what circumstances, could it be regarded as a normal condition? secondly, how frequently, and to what extent, might it be present without any ill consequences ensuing? The author defined the term degeneration to express the loss of those characteristic parts or marks of any given structure which were most intimately connected with its functions. Such a change, Professor Paget had remarked, bore witness rather to a deficiency than to a perversion of nutrition. There was no development of any new organic form; but, instead, a tendency to infiltration with oil-corpuscles or with earthy matter. In structures whose existence was shorter than that of the system of which they formed a part, or in organs which had occasional periods of activity, such changes were met with at the termination of those periods; and it might be produced in any organ by depriving it of the exercise of its functions. Thus degeneration was to be looked upon as a part of the natural as well as of the morbid history of the animal economy. Now, the placenta, being *par excellence* a temporary organ, might fairly be expected to be prone to degeneration at the close of the term of its office; and this the author believed to be true, and that almost every placenta expelled at the full time exhibited some signs of that change. The fact was notorious, that various deviations from perfect structure were constantly found in placentae; in favourable cases the fact was passed by as of no consequence, but in unfavourable cases, the placenta being more closely scrutinized, these appearances had been attributed to inflammation and effusion of lymph. The author confessed to have fallen himself into the error, till the paper of Dr. Barnes revealed the true nature of these alterations; and being soon convinced that degeneration of the placenta was by no means of uncommon occurrence, he determined to institute a more strict inquiry, the result of which was embodied in the present communication. For the sake of a clear definition of the term employed, the author briefly detailed the histological elements of the placental structure, and thus observed that the forms of degeneration commonly seen in the placenta were the earthy and the fatty. The earthy was so common, that he doubted whether any full-grown placenta could be met with that did not exhibit traces of it. These earthy deposits, examined microscopically, were seen as minute transparent crystals within the investing decidual cells of the fetal villi. This earthy matter was quickly and entirely soluble in acetic acid, with copious effervescence. The fatty degeneration was as common as the earthy, and was generally met with in the same placenta, though not in the same parts, nor in equal degree. It had been most fully and accurately described by Dr. Barnes and Dr. Hassall, and the author added some minute details of the progress of the fatty deposit in the pre-decidual cells, in which it commenced first as single globules, and then aggregated in clusters in the cells.

In some cases the oil did not increase in proportion to the degree of degeneration; in fact, neither the oil globules nor the earthy crystals were to be looked on as more than accidents, and not as constituting the essence of the degeneration: but whether so or not, the affected tufts became tallowy, exsanguine, brittle, and difficult to unravel; whilst in the extreme stage there was produced a white, glistening, translucent, amorphous substance, of gristly consistence, and breaking in all directions into sharp angular fragments. But in this apparently structureless substance the fetal vessels might, by careful examination, aided by maceration, be detected cropping out here and there on the broken surfaces. In this extreme degree of degeneration there was very little oil. Acetic acid caused the mass to swell up and become translucent. The author then gave the details of the microscopic examination of thirty placentae occurring consecutively in his own practice; in each, either fatty or early degeneration had taken place. He conceived that the true explanation of these phenomena must be looked for in the general analogies which regulate the growth of temporary organs. The placenta was the nutrient organ of a parasite, which inhabited its parent till it had attained a certain degree of development. Its cells, like other cells in the condition of active growth, had the power of appropriating nourishment from any parts with which they were in contact. It was probable that the size and condition of the placenta bore a strict proportion to the wants of the fetus and to its powers of assimilation, and that, on the one hand, a placenta of perfect structure showed that the functions of the organ were actively carried on; on the other hand, degeneration testified either that the organ was originally formed on an unnecessarily large scale, or that the fetus could not appropriate the supplies furnished by the entire organ, or that the work of development being nearly completed, the active employment of the whole organ had become unnecessary, and portions of it fell into decay. The author offered the three following conclusions as the result of his investigations: 1. That incipient degeneration was a normal condition of the placenta at the end of pregnancy. 2. That it arose from partial cessation of the active functions of the organ when the fetal development was nearly completed. 3. That when it occurred in the earlier months, it probably arose from some antecedent want of nutritive force in the fetus, or by its death. On the subject of inducing premature labour, on the ground of placental disease, the author summed up his communication in the emphatic words of Wilde: "Nostrum est, summo studio cavere, ne abortus expediatur vel immo excitetur, sed omni arte potius intendere ut prospera et immunis restitatur graviditas; quippe quâ unâ, duplicis vitæ, lætam spem et sinceram salutem recuperavimus."—*Lancet*, Feb. 12, 1853.

61. *Albuminuria in Pregnant Females; its Symptoms, Causes, Results, and Treatment.*—[Much attention has of late years been devoted to this affection, and a number of works have recently appeared in relation to it. In the third No. of the *Association Medical Journal*, there is a very interesting digest of some of the principal of these,¹ and which we transfer to our pages.]

¹ 1. LEVER, John C. W., M. D. Cases of Puerperal Convulsions, with Remarks.—*Guy's Hospital Reports*, 2d series, vol. i. p. 495.

2. DEVILLIERS and REGNAULT, MM. Recherches sur les Hydropsies chez les Femmes Enceintes.—*Archives Génér. de Médecine*, 1848.

3. CORNACK, John Rose, M. D. Dependence of Puerperal Convulsions on Toxæmia; Explanation of the more common occurrence of Renal Convulsions in Primipare.—*London Journal of Medicine*, June, 1849.

4. BLOU, M. Hippolyte. De l'Albuminurie coïncidant avec l'Eclampsie.—*L'Union Médicale*, Oct. 10, 1850.

5. LITZMANN, Professor (of Kiel). On Bright's Disease,* and Convulsions before, during, and after Labour.—*Deutsche Klinik*, May, June, and July, 1852.

* The term "Bright's Disease" is very frequently used by continental writers in a wider sense than by the English. They appear to express by it all conditions of the kidney in which albumen is found in the urine—from simple congestion up to advanced structural disease.

Albuminuria in pregnant and parturient women has generally been noticed in reference to convulsions, for the most part occurring in primiparæ. The investigation of Dr. Blot and Professor Litzmann were made with a view to determine its frequency during pregnancy.

Dr. Blot found it present in 41 cases out of 205, primiparæ being chiefly affected.

Dr. Litzmann has examined the urine of 131 females; 79 during pregnancy, 80 during labour, and 80 after delivery. He found albumen present in 37, and absent in 95. Of the 95 whose urine contained no albumen, 53 were primiparæ and 42 multiparæ. Of the 37 who had albuminuria, 26 were primiparæ and 11 multiparæ; two were pregnant with twins. Of the 37, the urine of 16 was found to be albuminous during pregnancy; in 10 of these the albumen continued some days after labour; in 4, it disappeared before confinement. In 4 women in whom albuminuria was found after labour, it had probably existed during pregnancy, although the urine had not been examined.

Dr. Litzmann points out that albumen may be present in the urine from vesical catarrh. This can sometimes, but not always, be referred to pressure on the neck of the bladder during labour. It is distinguished from renal albuminuria by the absence of fibrinous casts of the uriniferous tubes, which he found in most of the cases in which the albuminuria had reached a high degree, towards the end of pregnancy.

Symptoms. Nothing certain is known as to the time when the renal affection commences. It usually begins insidiously, and increases slowly; its commencement is, perhaps, rarely denoted by any remarkable symptoms. The only constant sign by which renal disorder during pregnancy is denoted, is the state of the urine. Dr. Litzmann has not observed albumen before the eighth month; but Devilliers and Regnault found it in the sixth. The quantity of albumen is usually very conspicuous, and increases as the time of delivery approaches. In proportion to the intensity and duration of the morbid process in the kidneys, are found casts of the uriniferous tubes in greater or less quantity, the epithelium lining them being sometimes normal, sometimes in a state of fatty degeneration. In the milder cases, the tube-casts are often found just at delivery, or soon after. Careful examination will probably in all cases detect a not inconsiderable diminution of the quantity of urine. Pain in the loins is not diagnostic; but Dr. Litzmann has found tenderness on pressure over the kidneys in nearly all cases—this being absent in pregnant females whose kidneys are unaffected. Dropsy, in many cases, is entirely absent; but more frequently it is considerable. It is favoured by an impoverished state of the blood, and by local impediment to the circulation. The true succession and influence of these causes cannot always be determined. Edema usually commences in the last four months of pregnancy, mostly in the lower limbs, ascending gradually to the knees, or even higher. Sometimes it is limited to these parts; but oftener extends to the abdomen, and more rarely, as in a case recorded by Dr. Litzmann, to the *labia majora*. A most unequivocal sign of renal disease is oedema of the upper part of the body, the hands, arms, and face; but Dr. Litzmann has several times seen this when there has been no albumen in the urine, although there have sometimes been even headache and transient disturbance of vision. The oedema in these parts generally appears towards the end of pregnancy; sometimes only after the patient has been some time in bed, disappearing when she arises. In the lower limbs, the skin is usually pale and cool, and the finger leaves a depression; in the face, the skin is generally warmer than usual, the cheeks red, the eyelids injected, and the skin elastic. The oedema sometimes appears and disappears irregularly; sometimes it increases up to delivery, and then disappears without leaving any trace of renal disease; and that even when the albumen in the urine has gone on increasing.

6. SIMPSON, Professor J. Y. Albuminuria in Puerperal and Infantile Convulsions, etc.—*Monthly Journal of Medical Science*, October, 1852.

7. COSTILHES, Dr. Case of Convulsion occurring seven hours after Delivery.—*Gazette Médicale*, October 9, 1852.

No. L.—APRIL, 1853.

Mechanical Origin of Albuminuria during Pregnancy. In his paper, of which we have given the title, Dr. Cormack ascribes the frequency of albuminuria (and of convulsions) in primiparae, to the greater tenseness and rigidity of the abdominal parietes; the gravid uterus being therefore more apt, by its inward pressure, to produce renal congestion. The tight girdling of the abdomen, often practised by those who become pregnant out of wedlock, probably acts powerfully in producing the same effect; and may, as Dr. Cormack suggests, explain to some extent, why unmarried primiparae are more liable than married primiparae to puerperal convulsions. When convulsions occur in subsequent pregnancies, Dr. Cormack would, believing them to be chiefly toxicæmic, ascribe them either to imperfect distension of the abdominal wall, from incomplete gestation on former occasions, to excessive muscular development, to renal disease, or to excessive volume of the uterine tumour, including pleural pregnancies. He says that "the gravid uterus, or other tumour, pressing on the renal veins, or in any way seriously impeding the return of blood from the kidneys, must induce more or less inability on their part to perform their emunctory office."

Dr. Litzmann adopts a similar explanation of the occurrence of albuminuria in pregnancy. "In favour of the mechanical explanation of the occurrence of albuminuria in pregnant women, may be adduced its predominance in primiparae—a fact recognized by all observers. The tight and unyielding abdominal wall most naturally causes the uterus to press more powerfully on the structures behind and above it." Two of his patients who had albuminous urine, were pregnant with twins; in others, there was a large quantity of liquor amnii, or a large child, or both. In one case, there were periodical spasmodic contractions of the abdominal muscles, especially the recti, pressing the uterus against the spine; in four cases the pelvis was narrow.

Dr. Murphy, in his *Lectures on the Principles and Practice of Midwifery*, objects to Dr. Cormack's explanation—"First, that the pressure exercised by the gravid uterus is of too gradual a nature to cause any great amount of congestion, and the circulation has sufficient time to find new channels for itself, and relieve the emulgent veins. Secondly, the period of the attack would be more frequently at the last month of gestation, or the commencement of labour, than we know it to be." (pp. 379-80.) With deference to so high an authority in matters obstetrical as Dr. Murphy, we do not feel convinced by his arguments. In the first place, the number of cases in which albuminuria has been detected during pregnancy, proves that there must be some impediment to the renal circulation; and we must probably take into consideration not only the unyielding abdominal walls, but also the hindrance to the compensatory circulation through the mammary and epigastric veins, produced by tight stays and other articles of female apparel. Secondly, we find Dr. Murphy himself stating (p. 368)—and this is in accordance with general experience—that the most frequent period of puerperal convulsions is "on the approach, or during the progress, of labour."

Relation of Albuminuria during Pregnancy to Renal Disease. In his paper already quoted, Dr. Cormack, after referring to the frequent abrupt occurrence of convulsions and death in the course of Bright's disease, writes as follows: "It is quite plain that a pregnant woman, labouring under Bright's disease, even in an early stage, must in this way run a tenfold risk of convulsions. If she have an ovarian tumour, or any other mechanical predisposing cause to renal congestion, besides the gravid uterus, her risk will also be great. In her, too, delivery will hardly bring exemption from the danger of toxæmia from renal non-elimination. Dr. Simpson said, in 1843, that he had been accustomed to teach in his lectures that 'patients attacked with puerperal convulsions had almost always albuminous urine, and hence probably granular renal disease.' This remark of Dr. Simpson's, with deference to so high an authority, I must dissent from. Under proper management, the majority of those affected with puerperal convulsions quickly and perfectly recover, and in future pregnancies are very rarely affected. Undoubtedly, women who have structural disease of the kidneys, are pre-eminently liable to renal congestion, and consequent toxæmia; but then œdema, albuminuria, and convulsions, are not, in the

puerperal woman, pathognomonis of any organic disease of the kidney, though in the *fatal* cases we may expect them to be often present. In three fatal cases of puerperal convulsions, Dr. Simpson found, on dissection, a great amount of renal disorganization. Albumen was looked for in the urine during life, but was not found."

In the *Monthly Journal of Medical Science*, for October, 1852, Dr. Simpson expresses a greatly modified, and we think more correct opinion, on the subject. He says: "Usually, the state of albuminuria which leads to puerperal convulsions is a transitory morbid condition, from which the patient recovers within the course of a few days after delivery; and the affection does not depend on, or result in, any actual change of structure in the kidney."

Professor Litzmann, in the *Deutsche Klinik* for July 17, says: "The anatomical changes which are found in the kidneys of those pregnant females who have died with Bright's disease, denote, for the most part, only the earlier stages. Even Devilliers and Regnault have not felt themselves justified in assuming the existence of albuminous nephritis in all cases. They generally found the kidneys enlarged in volume; the capsule was rarely adherent. In two cases only was there an undoubted granular appearance in the organ. In three cases, inconsiderable enlargement of the organ was accompanied by slight hypertrophy and paleness of the cortical layer. In two other cases, the cortical substance was highly coloured, while the pyramidal portion was in some parts injected, in others pale. In one case, the deep red of the hypertrophied left kidney contrasted strongly with the paleness of the right; and in another, the hyperæmia and swelling were limited to the cortical substance. Cazeaux and Rayer have observed generally the second, sometimes the third, and in one case the fourth form of the albuminous nephritis of the latter author. In all the cases examined by Frerichs, he found fibrinous casts in the urinary passages and in the urine. In one of the cases described by me, the changes in the kidneys had proceeded unusually far; and this might have been inferred from the severity of the symptoms during life, and the presence of tube-casts in the urine."

Dr. Litzmann believes that there is no case in which renal disease, continuing after delivery, has been proved to have commenced during pregnancy; although women have died of chronic disease of the kidneys some time after labour. It is, perhaps, probable that in certain rare cases the renal affection during pregnancy becomes so intense and extensive, that the impeded circulation is not restored after delivery; on the other hand, there is no doubt that women who have once suffered from renal congestion when pregnant, are liable to its return when again in a similar condition. It by no means follows that the disease should amount to uræmia, for this is not always present even in primiparae.

There is, we think, ample evidence to prove that albuminuria during pregnancy is far from being an indication of *permanent structural renal disease*; but if disease of the kidney already exist, the danger to the patient will be much increased, while delivery will not cause the albumen to disappear from the urine. Dr. Murphy inclines to the belief that "the albuminous state of the urine, taken in connection with the œdematous condition of the surface, would indicate the existence of renal disease in many instances." Temporary congestion is no doubt disease, in the strict sense of the term; but if Dr. Murphy means permanent structural disease, we think that the statistics of Blot and Litzmann, as to the frequency of albuminuria during pregnancy, as well as the common fact of recovery from it, militate against his opinion.

Prognosis. The prognosis in cases of albuminuria during pregnancy, is, according to Dr. Litzmann, more favourable than when the affection occurs under other circumstances. The danger principally arises from poisoning of the blood with urea; but not unfrequently the renal affection runs its course without any threatening symptoms, so that it might be overlooked, unless the urine were examined chemically and microscopically. The albumen commonly disappears after delivery; often within forty-eight hours. During labour, the secretion of urine commonly increases, as does also the number of fibrinous tube-casts; after delivery, these increase for a time, but soon disappear, even

while albumen is still present. The œdema disappears, as the quantity of urine increases.

Relation of Albuminuria to Puerperal Convulsions. The frequent occurrence of albuminuria in connection with puerperal convulsions, has been fully demonstrated by the observations of Drs. Simpson, Lever, and others. M^M. Devilliers and Regnault declare that "chez toutes les femmes éclamptiques, on trouve de l'albumine dans les urines. Cette règle ne nous a pas encore paru souffrir d'exceptions." Reasoning on these and similar statements, Dr. Cornmack says: "If it be a fact, then, that albuminous urine and anasarca—the characteristic signs of congestive kidney—be so common in puerperal convulsions, as to be regarded, by the first and most recent authorities, as their constant concomitants, it may, I think, be very safely inferred that the renal congestion is the cause of the convulsions; or, to be more explicative and precise, that the convulsions are direct toxicological effects on the nervous centres, produced by poisonous substances which the unembarrassed kidney could throw off with the urine, but which the congested kidney cannot excrete." And he refers the greater frequency of convulsions in primiparae to their greater liability to congestion of the kidney, from the mechanical causes already described.

Dr. Litzmann writes as follows: "The principal danger in Bright's disease occurring in pregnant females arises from the uræmia, which is usually indicated by convulsions. Of the causal connection between Bright's disease in pregnancy, and convulsions, no one, who will observe it, can remain in doubt; although I by no means deny that exceptional cases of eclampsia may arise from other causes. Lever has observed a case depending on inflammation of the meninges. The first authors who pointed out the occurrence of albuminuria in puerperal convulsions, as Lever, etc., recognized the analogy of the convulsions to the cerebral disturbances occurring in common cases of Bright's disease; and expressed their conviction that they were dependent on the noxious influence of blood poisoned with urea. But they, as well as Devilliers and Regnault, failed in discovering urea in the blood of convulsive patients.¹ Frerichs, from his observations on patients and experiments on animals, has asserted that the symptoms of uræmic intoxication in Bright's disease do not depend on the existence of urea, as such, in the blood, but on its transformation within the vessels into carbonate of ammonia, under the influence of a peculiar ferment. My observations on the convulsions of pregnant females entirely agree with this theory. In one of my cases, the presence of ammonia in the blood was not ascertained by conclusive evidence; but in three other cases there could be no doubt of its presence, as carefully repeated experiments always gave the same result. On the other hand, when there were no symptoms of uræmic intoxication, though albuminuria existed, the blood appeared free from this poisonous admixture. I have not found urea either in the blood, nor in the serum resulting from scarification of the oedematous parts. In only one case could I detect ammonia in the expired air. In one case just after delivery, the sweat on the forehead had an alkaline reaction."

Although puerperal convulsions are often connected with renal congestion, it by no means follows that they are an inevitable result. Devilliers and Regnault observed eleven cases of convulsions in twenty pregnant females who had albuminuria; Blot found them present in only seven cases out of forty-one. Dr. Litzmann found seven cases with uræmic symptoms, five of whom had convulsions, in thirteen cases described by him.

Other Effects of Toxæmia from Renal Congestion during Pregnancy. Dr. Litzmann observes that certain other phenomena, principally connected with the nervous system, which have been usually considered as premonitory of convulsions, may be themselves the only effects of toxæmia; and that this probably occurs when the quantity of urea in the blood is but small. Headache is generally present when there is œdema of the face; and is then probably most frequently the result of simple congestion. The most marked symptoms of uræ-

¹ In Guy's Hospital Reports, 1849, vol. vi. chap. 12, Dr. Lever appears to have found urea in the blood of an eclamptic female.

mia are disturbances of the senses, especially of vision. The patients complain of muscæ volitantes, or see objects coloured yellow or red; more frequently they see dark figures, or only see the half of objects; sometimes there seems to be a dark veil over objects; or the patients may be quite amaurotic. These symptoms are sometimes only momentary; in other cases, when they are more intense, they continue for hours, and days. In the amaurosis, the pupils are little or not at all dilated; but they obey sluggishly, or are unaffected by, the stimulus of light. Amaurosis usually appears before or during labour; but sometimes subsequently. Coma or convulsions are apt to follow it. It is probable that most of the cases of amblyopia and amaurosis, which occur at the end of pregnancy, disappear after labour, and return in subsequent pregnancies, are to be referred to this head.

Noises in the ears, which authors have named among the forerunners of eclampsia, have never been observed by Dr. Litzmann.

Nausea, a sense of choking, and vomiting, are among the most constant symptoms. The vomiting is not always an indication of uræmia, but is sympathetic with renal irritation, or perhaps more frequently with congestion of the brain. Its connection with uræmia must be decided by chemical examination of the vomited matters.

When uræmia is developed for the first time during labour, there is often a dulness of the intellect, a certain wildness or melancholy of the patient, and remarkable restlessness and impatience during the labour-pains: there frequently are rigors, returning with each pain (Hamilton, McClintock, and Hardy); the pulse is more frequently slow than accelerated.

Eclampsia rarely occurs without any premonitory symptoms; and when it does, it probably arises from a sudden impregnation of the blood with a large quantity of urea.

Dr. Costilhes (*Gazette Médicale*, October 9, 1852), points out that long continued albuminuria, by impoverishing the blood, may give rise to hemorrhage from the uterus or other parts of the body.

Treatment. Dr. Cormack writes as follows: "The prophylaxis of renal puerperal convulsions must evidently embrace an avoidance of too long continuance in the supine position; an easy corset, giving free play to the lungs, and not pressing back the womb; moderate exercise; regularity and sufficiency of the alvine evacuations; and a good state of the skin. Mental excitement must also be avoided, as it might, even with a moderately poisoned state of the blood, be the immediate cause of convulsions." In the treatment, he gives the following as the leading indications:—

1. Remove pressure from the renal vessels, by interdicting the supine posture, and by unloading the bowels; and, when safe, by emptying the uterus.
2. Relieve congestion of kidneys by purging, by cupping in the loins, or by general bleeding.
3. Venesection, if apoplexy be threatened.
4. Calmatives to soothe the excited nervous system.

The first two of these measures have more especial reference to the condition of the kidneys; the last two to the cerebral symptoms.

Dr. Litzmann observes, that the renal congestion cannot be relieved before delivery; but that it may be mitigated, and more unfavourable symptoms averted, by timely measures, especially the removal of all causes which may assist in impeding the circulation through the abdominal vessels. It is thus important to obviate the constipation so common in pregnant women; and in one case, Dr. Litzmann has not only seen all the symptoms recede, but the albumen in the urine diminish. If the renal disease have set in suddenly, and is accompanied with much pain and tenderness, local bleeding is indicated. It is doubtful whether benefit would be derived from diuretics or astringents before labour; but on this point he has had no personal experience.

With regard to the blood-poisoning, when symptoms of an impoverished state of blood occur, a strengthening diet, with iron, cinchona, etc., are indicated.

In the unmistakable symptoms of cerebral congestion, which almost always accompany uræmia, local depletion and cold applications, timely applied, usually give quick relief, and the secretion of the dry skin may be rendered

active by bathing with warm vinegar. Frerichs, acting on his theory of the conversion of urea into carbonate of ammonia within the blood, gives acids, especially the benzoic; and Litzmann has given the benzoic and citric acids, he believes sometimes with favourable results.

If convulsions occur, general bleeding is indicated in strong plethoric individuals. But if the renal disease have lasted some time, and hydræmia is present, this treatment is likely to injure; local depletion must then be employed and repeated as may be required. Large doses of acids must be given, cold wet cloths applied to the forehead, and the extremities bathed with warm vinegar. It is often useful to empty the intestinal canal; but Dr. Litzmann cautions his readers against being led to give large doses of drastics and mercurials; and he acknowledges himself not blameless in this respect, with regard to a case related by him. If all these remedies fail, labour must be induced; and after birth, the state of the kidneys must be carefully watched. Mild diuretics are now likely to be useful; but if albumen continue to be present in the urine, the case is to be regarded as one of chronic Bright's disease.

HYGIENE.

62. *Destruction of Puerperal Miasma in Lying-in Hospitals.* By Dr. BERN. —The means employed by the author consist in heating the room to a high degree with dry air. This is effected by round iron stoves placed in the centre of the room, and connected with the chimney by metal tubes. The heat can be raised to 50–60° R. (about 155° F.). This must be kept up for two days, during which time all furniture and utensils are to remain in the room.

In March, 1851, puerperal fever invaded the Berlin Lying-in Hospital with remarkable severity; nearly all the patients suffered, and the institution was closed for six weeks, during which time there was the most careful ventilation and purification. These means proved insufficient. Upon the reopening of the hospital, all the new patients became attacked by the disease a few days after delivery. Then the author tried the plan here detailed in every room in the house. The effect was surprising; no fresh attack occurred during the whole summer. The same measures were adopted some time afterwards, and with the same success.—*Med. Times and Gaz.* Feb. 19, 1853, from *N. Ztschr. für Geburtsh.* xxxii. 3.

63. *Experiments on the Diet of Prisoners.*—The No. of the *Monthly Journal of Medical Science*, for May, 1852, contains an account, by Prof. CHRISTISON, of some experiments on the diet of prisoners, which are interesting, both in a practical point of view, and in relation to the physiology of nutrition. The object of the inquiry was to ascertain with every possible accuracy whether the dietary of the regulations of the General Board of Directors of Prisons in Scotland was sufficient and not more than sufficient to maintain the health and condition of the prisoners. The observations were conducted on a larger scale and with greater care than any similar investigation, and the results are, therefore, entitled to confidence.

The following are Dr. Christison's conclusions:—

1. For the average of people whose occupation involves moderate muscular effort and no great exercise, a simple, well-selected sort of food, supplying seventeen ounces of daily real nutriment, of which four ounces are nitrogenous principles, constitutes a sufficient diet for maintaining health, strength, weight, and general condition; but less is not sufficient.

2. The proportion of nitrogenous nutriment in such a diet cannot be very sensibly reduced below four ounces a day without risk of injury.

3. This amount of nutriment, though in general adequate for the average in the supposed circumstances, is not always so.

4. It is probably inadequate for those who have been accustomed to a vigorous

occupation in the open air, and a liberal dietary, even when their employment is changed for one involving no great muscular effort or exercise.

5. It is inadequate for a fair proportion of persons considerably exceeding the average in bulk.

6. It is inadequate for a considerable proportion of growing lads between sixteen and twenty.

7. It is more generally adequate for females than for males.

8. It is rendered occasionally inadequate by other causes not distinctly indicated by the observations in the Scottish prisons, but certainly independent of any increase in habitual muscular exertion.

9. Hence the economical regulation of the diet of bodies of men must always be a matter of great difficulty; and if deviations from the standard dietary be not allowed with a liberal discretion, injury will be apt to ensue. And here it should be added from other observations, that suspicion may be lulled by no very perceptible injury except loss of weight occurring in ordinary seasons; while, nevertheless, manifest injury will arise in periods of epidemic disease.

10. The prison dietary in Scotland has been very successfully adjusted by long experience in most of the prisons, so far as regards the class of prisoners who formed the subject of the preceding observations and experiments, viz., those imprisoned for terms not exceeding two months. But in that dietary treacle water cannot be substituted for milk without a reduction of flesh, the forerunner of probable ill health, unless some compensation be made in other articles of food. It has, in fact, been disallowed by the board since these experiments were made.

11. In adjusting dietaries, and in all practical inquiries into the subject, reliance ought never to be put in practical observation alone; but scientific analysis should be likewise brought into requisition. I could quote numberless errors committed by merely practical men, which could scarcely have escaped notice had they united scientific knowledge to practical skill.

The following table is added for the purpose of showing in one view the nutritive value of the several dietaries referred to above, and their respective influence on the weight of the prisoners subjected to them:—

	Ounces of nutriment.			No. in 100 prisoners whose weight was		Average pounds lost by each.
	Nitrogenous.	Carboniferous.	Total.	Maintained or increased.	Diminished.	
Edinburgh	4.05	12.87	16.92	82.0	18.0	1.5
Glasgow	4.06	12.58	16.64	67.3	32.6	4.0
Aberdeen	3.98	13.03	17.01	} 68.0	32.0	4.2
Stirling	4.27	13.40	17.67			
Ayr	4.17	13.20	17.37	29.0	71.0	5.0
Dundee	2.73	14.06	16.79	50.0	50.0	5.25
Perth	2.68	14.11	16.79	46.0	54.0	3.3
Paisley	Not fully reported.			56.0	43.5	3.2
Carlisle	2.5	11.17	13.67	} 13.04	86.96	6.5
Do. hard labour...	2.93	12.17	15.10			

64. *On the Effect of Prolonged Horizontal Posture in the Production of the Great Mortality in Foundling Hospitals.*—M. HERVIEUX observes, that persons visiting the *crèche* of the Paris Foundling Hospital, admire the exquisite cleanliness, free ventilation, and mild temperature of that vast apartment. Still, of about 4000 infants annually admitted, about 3000, i. e. 75 per cent. die; and to explain this fearful mortality, the impoverishment of the blood of these victims of debauchery and poverty, their overcrowding, and the insufficiency of their nursing, have been referred to. All these have something to do with the result; but a chief cause of its production, hitherto overlooked, is the too prolonged maintenance of the horizontal posture. Each child is taken up, fed, and

changed four times daily, and again at night, when it cries. Suppose this operation is performed six times on an average, as it only occupies about twenty minutes, the infant is lying on its back for twenty-two out of the twenty-four hours, quite unable at this age to change its position. Motion and exercise are essential to the well-being of the infant, and its proper place is its nurse's bosom, the warmth of which is imparted to it.

The children of the *crèche* die, in fact, of cold and hunger. Owing to the continuance of the horizontal posture, the temperature of the body becomes lowered, the limbs chilled, the circulation languid, and the respiration embarrassed. All the principal functions languish, the skin becomes indurated, and visceral congestions take place. Some of the children perish from sclerema, some from the so-called pneumonias, which are only sanguineous stases, and others from various serous effusions or hemorrhages. The definitive cause of all these disordered conditions is cold, not cold engendered by the diminished temperature of the surrounding medium, but cold resulting from their prolonged immobility.

We have also to inquire whether feeding infants four, six, or even eight times a day is sufficient. Books tell us that they should only be suckled at regular intervals, every three or four, or sometimes two hours; but any one practically acquainted with the rearing of young infants, must see the fallacy of this. In fact, they suck some thirty or forty times a day, absorbing, according to the calculations of Guillot and Lamperière, from three to four pints of milk. This suits them admirably; for in the first two or three years they have to acquire one-half the height and weight they will gain during the rest of their lives; and the limiting them to the periods and quantities suitable for older subjects is unphysiological and mischievous. It has been said that this so-called excess of food gives rise to the gastro-enteric affections, so frequently met with at this period of life; but, in fact, such diseases are not met with in private practice, either in the infants of the rich or of the poor, who are often so inordinately suckled, while the body of every child brought from the hospital exhibits more or less intense signs of acute or chronic gastro-enteritis. The practice of bringing up the children by hand has been assigned as a cause of the great mortality; but nothing similar to it is found among the children so brought up in the worst parts of Paris, where they, however, get abundance of milk and good nursing. At present, the eighty-four infants at the *crèche* have only nine nurses and two night nurses to attend to them; while M. Herrieux considers that one woman cannot pay suitable attention to more than two infants.—*B. and F. Medical-Chirurgical Review*, Jan. 1853, from *L'Union Médicale*, 1852, Nos. 139, 140.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

65. *Poisonous Plants of the Isthmus of Panama.* (From the Botany of the Voyage of H. M. S. Herald, under the command of Capt. Kellet, R. N., during the years 1845-51. By BARNOLD SEEMAN, naturalist of the expedition.)—"The most dreaded of the poisonous plants are the amaney (*theretia nervifolia*), cojon del gato (*theretia nitida*, De Cand.), manzanillo de playa (*hippomane mancinella*, Linn.), florin pondio (*datura sanguinea*), and bala (*glincidia maculata*, Kunth). It is said of the manchinel, that persons have died from sleeping beneath its shade, and that its milky juice raises blisters on the skin which are difficult to heal. The first of these statements must be regarded as fabulous, and the second be received with a degree of modification. Some people will bear the juice upon the surface of the body without being in the least affected by it, while others do experience the utmost pain, the difference seeming to depend entirely upon a man's constitution. Great caution, however, is required in protecting the eyes, for if the least drop enters them, loss of sight and the most acute smarting for several days are the consequence. The smoke arising from the wood produces a similar effect. While surveying on the coast of Darien, a boat's crew of H. M. S. Herald was blinded for some days from

having kindled a fire with the branches of this tree. Whenever the natives are affected by the poison, they at once wash the injured part in salt water. This remedy is most efficacious, and as the manchineel is always confined to the edge of the ocean, of easy application. It has been stated that the Indians of the isthmus dip their arrows in the juice of the manchineel. There are, however, various reasons for doubting this assertion: First, because the poison is, like that of all euphorbiaceæ, extremely volatile, and however virulent when first procured, soon loses its power. Secondly, because its effect, even when fresh, is by no means so strong as to cause the death of human beings, not even producing, as has been stated, the slightest injury on some constitutions. The statement may, therefore, be considered as an inaccuracy, and it may rather be supposed that the Indians, like those of Guiana, obtain their poison from the two species of strychnos common throughout Panama and Darien.

"The fruit of the amancay is also considered very poisonous; but its dangerous qualities have probably been overrated. There is a gentleman in Panama, who, when a boy, ate four of these fruits without experiencing any other effect than mere griping.

"The leaves of the bala, or, as it is also called, *maJera negra*, are used to poison rats. The *datura sanguinea* appears to have always played, and still continues to play, a prominent part in the superstitions of tropical America. The Indians of Darien, as well as those of Choco, prepare from its seed a decoction, which is given to their children to produce a state of excitement, in which they are supposed to possess the power of discovering gold. In any place where the unhappy patients happen to fall down digging is commenced, and as the soil nearly everywhere abounds with gold dust, an amount of more or less value is obtained. In order to counteract the bad effects of this poison, some *sour chic*, *de maiz*, a beer made of Indian corn, is administered." T. R. B.

66. *Death of the Duke of Bourbon*.—(For the particulars of this case, and the various opinions concerning it, see *Elements of Medical Jurisprudence*, 10th edit. vol. ii. p. 192.) "The circumstances attending the death of the Duke of Bourbon have not been generally known, owing to the interest Louis Philippe had in preventing, as far as was in his power, their being publicly exposed. There were several Englishmen in the house at the time, and among them a friend of mine, of the most unimpeachable veracity, from whom I received the following statement:—

"The Duke was on the eve of following Charles X. to England, from a feeling of dutiful submission to the head of his family, but by no means concurring with him in his political conduct. On the morning of his death he had quarrelled with his mistress, Madame Feuchieres, and received a black eye, with which he appeared at dinner. In the mean time, it was known that he had sent for his confidential lawyer, who resided about forty miles off, to alter his will, and the lawyer was expected the next day. He had two valets de chambre, one of them greatly in his confidence; the other in the interest of Madame F. He said to his favourite, 'You must sleep to-night in my ante-chamber.' 'No,' said the valet, 'it is Monsieur ———'s turn, and it would create an uproar.' 'Then,' said the Duke, 'they will murder me in the night.' In the morning, he was found dead, hanging to the rod of a curtain, which could not have been done by himself, as he had scarcely the use of his arms. The king had intrigued with Madame F., by means of which he had succeeded in obtaining half the property of the Duke for his family, and to avoid the publication of his correspondence with her he found means to procure her acquittal."—*Notes by Sir Robert Heron, Baronet*. Third edition. London, 1852. (This work is very much of the character of the writings of Wrexall.) T. R. B.

67. *Legitimacy. Period of Gestation*.—Vice-Chancellor's Court (England), Feb. 18, 1852. *Dyson v. Dyson*. Bill filed by infant claiming to be the child of G. W. Dyson, one of the defendants, and as such child to be entitled to certain real and personal estate, subject to his father's life estate therein. It was alleged by all the defendants that, though the plaintiff was born in wedlock, he was not the child of G. W. Dyson. It was proved that G. W. Dyson left his

wife in Madeira, in February, 1849; that she returned to England in August following; and that the plaintiff was born on the 8th of January, 1850.

Hare, for the plaintiff, read evidence of several medical witnesses, deposing to the possibility of the period of gestation being protracted to a period of 330 or even 336 days, and cited a case, where a foreign court had decreed a child born 333 days after access to be legitimate.

W. M. James and Nugent, for defendants, not called on.

The *Vice-Chancellor* referred to the *Gardner* Peerage case, where a period of non-access considerably shorter than 336 days had been held by the House of Lords to be decisive against the legitimacy of the child, and said he could not make a decree upon the present evidence in favour of the plaintiff. But plaintiff was entitled to an issue. Plaintiff's counsel refusing this, the bill was dismissed.—*Legal Exam. and Journ. of Med. Jurisprudence*, No. 7. T. R. B.

68. *Chloride of Arsenic*.—Notice of, by Dr. PENNY and WILLIAM WALLACE.—In evidence of the extreme facility with which arsenious acid yields the chloride when heated with hydrochloric acid, we may mention one or two experiments.

Two tenths of a grain of arsenious acid were heated on a distilling apparatus with 550 grains of hydrochloric acid, specific gravity 1.100; when one-twentieth of the liquid had distilled over, the distillate was tested with sulphuretted hydrogen; a decided precipitate of sulphide of arsenic separated.

In another experiment, one grain of arsenious acid was distilled with 550 grains of the same hydrochloric acid. A piece of copper ribbon placed in the neck of the flask became coated with a crust of metallic arsenic as soon as the liquid began to boil. One-tenth of the liquid was allowed to distil; and on testing one-third of the distillate with sulphuretted hydrogen, the presence of arsenic was clearly indicated. Another third of the distillate was subjected to Reinsch's process, which also gave unequivocal proof of the presence of arsenic. The separation of metallic arsenic in Reinsch's process appears to depend almost entirely on the ready production of chloride of arsenic, which is instantly decomposed on contact with copper.

As the formation and escape of chloride of arsenic appear, therefore, to occur with certainty when arsenious and hydrochloric acids are heated together, it becomes interesting to inquire whether similar results would obtain in presence of organic matters.

Half a grain of arsenious acid was mixed with an ounce of porridge, and an ounce of hydrochloric acid being added, the mixture was distilled. The moment the mixture began to boil, a slip of copper ribbon previously placed in the neck of the flask was coated with metallic arsenic. Nearly an eighth part of the mixture was distilled over, one-half of which gave with sulphuretted hydrogen, the well-known effects of a solution of arsenic.

Again, two tenths of a grain of arsenious acid were mixed with an ounce of porridge, and three-fourths of an ounce of hydrochloric acid, and the mixture distilled as before. Three drachms of the distillate, when tested by Marsh's process, afforded brilliant stains of metallic arsenic. The distillate gave also a yellow precipitate with sulphuretted hydrogen.

Similar experiments were performed with cow's liver and common broth. The results were equally satisfactory.

The foregoing experiments plainly indicate the availability of the chloride of arsenic in medico-legal investigations for the separation of the metal from animal and vegetable matters, and we are induced to think that its production by the direct agency of hydrochloric acid will be found in practice to be more convenient than by distillation with sulphuric acid and common salt, as recommended by Dr. Fyfe. It appears to be peculiarly suitable for the preparation of the liquid to be subjected to Marsh's process. The chief precaution to be observed is to employ the hydrochloric acid in sufficient quantity and of full strength.

Several experiments were likewise made with sulphide of arsenic. It is slowly decomposed by concentrated hydrochloric acid, with the formation of chloride of arsenic; but the distillate is very apt to be contaminated with sul-

phide of arsenic, reproduced by the secondary action of the sulphuretted hydrogen disengaged at the same time. As common orpiment, however, usually contains arsenious acid, the present process seems also applicable to those cases in which this substance may occur.—*London, Edinburgh, and Dublin Philosophical Magazine*, November, 1852. T. R. B.

69. *A Case of Doubtful Paternity.* By W. L. SUTTON, M. D., of Georgetown, Kentucky.—A child was brought to Georgetown, in August, 1852, by its reputed father, accompanied by his physician, a gentleman of 45 or 50 years of age, for examination by the physicians of the town. The attending physician believed the colour of the child was occasioned by the foramen ovale remaining open. In proof of this, he alleged that when the child cried he became much darker, decidedly blue, and thought that the imperfect aëration of the blood consequent upon the patent condition of the foramen was sufficient to account for the permanent dark colour of the skin. In this opinion he was in general supported by another medical man who had seen the child when two months old.

Other physicians discredited the opinion that the colour depended upon cyanosis; they agreed that there were appearances about the child of a very suspicious tendency, but declined any opinion as to admixture of blood, without a better acquaintance with the relatives of the husband and wife.

The child is a boy, four months old, with black, straight hair; the fine hair on the forehead black; the forehead rounded; the nose broad, particularly expanded at the alæ; skin dark, yet not darker than purely white children are sometimes seen. Near the extremity of the coccyx, and rather to one side, was a spot, oval in shape, about three-fourths of an inch long, decidedly dark. There is a popular notion that when a child is tainted with African blood, the scrotum and a streak down the back are always dark. Nothing of that kind existed.

The moral testimony in the case was that, up to the birth of the child, the mother had been entirely above suspicion. In fact, she had been considered a very modest woman. She was said to have fair complexion, light hair, and blue eyes. The husband, who accompanied the child, had nothing remarkable as to complexion, hair of the ordinary brownish colour. His mother was reported to be very dark, with black hair.

Subsequently, it was reported that the woman acknowledged that she had had occasional connection with two negro men in the neighbourhood.

Such are the facts as given by Dr. Sutton. We add some of his comments, which are worthy of note, from his residence among a slave population.

"In this town there is a family—the father half white, the mother three-fourths—whose children vary very much in colour. Some are pretty good samples of the negro race, and others, at five or six years old, are not only as white as most white children, but having straight and light-coloured hair. In stating this, I have gone upon the presumption that the facts are really as they appear. Some of the children may be by fathers purely white, and others by those wholly black. I can only say that no suspicion attaches."

To a statement made by the writer, that, "at birth, the new-born black infant cannot be always distinguished from the white—its hair has not yet its peculiar make, and we can only notice the tendency to dark on some parts of the body; in a few days, however, the change commences on the countenance, and gradually extends over the body"—Dr. Sutton objects as follows: "This is rather too positive. In many cases, a child of purely black parents is so white at birth as to exhibit no tendency to dark on any part of the body, and, like other changes, this sometimes takes place much more slowly than in others."

"The spots spoken of above are certainly rare, nor do I know to how much consideration they are entitled. There was one on the child which gives rise to these remarks. On the other hand, without being able at this time to refer to any particular case, I am certainly under the impression that I have seen persons, entirely free from suspicion of admixture, who had a dark spot on some part of the body. I sometime since owned a negress, who clearly had no

white blood in her, yet she had a large spot on the forehead and temples greatly darker than her skin in other parts.

The hair, although a very important feature, is not conclusive in determining our judgment. It does not necessarily begin to assume its distinctive character in a few days, as we might infer from the expression of Beck. In half-breeds, generally, it is only curly, and not knappy, as in the negro; frequently, it is more curly than occurs occasionally in persons purely white; whilst again it is as knappy as in the negro.—*Western Journ. Med. and Surg.* Oct. 1852. T. R. B.

70. *Poisoning by Mushrooms.*—Dr. Gornbor has published, in the *Union Médicale*, the cases of seven persons poisoned by them, and of whom three died. The mushrooms were fried in butter and eaten at supper, by a family of parents, children, and a domestic. The quantity consumed by each was very much alike. The night passed quietly; but in the morning the grandfather was seized with vomiting and purging, from which, however, he recovered rapidly. The father, aged 38 years, was similarly affected from morning till evening; but also recovered. On the contrary, the mother and two of the daughters were not seized until twenty hours after eating the mushrooms, and all of them died after sixteen hours of suffering. Lastly, a female servant, aged 13 years, was not attacked until at the expiration of twenty-nine hours after the supper, and then, after vomiting, purging, and cramps, recovered rapidly.

The mother was the only person examined after death. There was a decomposition of the tissues, and the abdominal viscera were softened, and the odour from them was extremely fetid.

What is, however, most remarkable, is that a seventh person, aged 16 years, ate, the next day, mushrooms, at least half in quantity of those that had served the family the day previous. These, however, had lain in water for an hour, and were then drained and pressed. In this condition they were fried with butter and eaten. Diarrhoea followed for several hours, without any other dangerous effect.

Conclusion.—The above cases seem to verify the opinion of Dr. Pouchet, of Rouen, that, if mushrooms be for some time boiled in water, their poisonous principle will be destroyed or extracted.—*Journal de Médecine et Chirurgie*, November, 1852. T. R. B.

71. *Tincture of Nut-Galls an Antidote to Poisonous Vegetable Alkaloids.*—Caventou, in a letter to Bouchardat, insists greatly on the value of this substance. The tannic acid contained in it causes the precipitation of the alkaloid.

He at the same time discourages the use of the solution of the iodide of potash, which has been recommended by some.—*Gazette des Hôpitaux*, December, 23, 1852. T. R. B.

72. *Death from the Vapour of Muriatic Acid.*—The *Brussels Herald* says: "M. Pontin, a Swede, whose literary patent was well known, and who was deputy master of ceremonies at the Swedish court, has just died in a most extraordinary manner. He was returning to Sweden, after a voyage he had taken on the Continent. On board of the vessel in which he was a passenger, some carboys of muriatic acid were placed on the deck just above his cabin; during a very stormy night, two of these bottles broke one against the other, the acid running through the cracks of the deck into his cabin; the gas which was contained in it immediately produced convulsions, and he died after one day's dreadful agony."—*Athenæum*, Oct. 30, 1852. T. R. B.

73. *Religious Insanity.*—A student in theology, at the university of Bonn, in a fit of this, went to a neighbouring wood with hammer and nails, and finding a tree in the form of a cross crucified himself upon it. He was discovered by some peasants, who cut down the tree and carried him with it to Bonn, where he was taken into the hospital, and is now declared out of danger. Several such cases are recorded in *Winslow's Anatomy of Suicide*.—*Med. Times and Gaz.* Aug. 28, 1852. T. R. B.